Textile Industries

MAY, 1950

formerly COTTON Textile Industries

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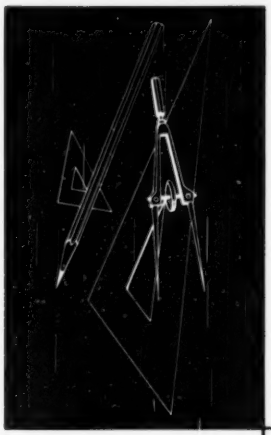
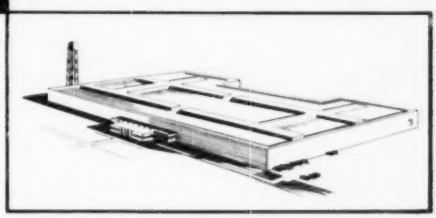


From Fibre to Fabric—



—The *Engineer* plans for your profit, peace and progress

Every step in your process from fibre to fabric—from any raw material to finished product—can be critical if not correct. If planned and integrated with your needs, it's but a stepping stone on a smooth path to market.

Today's planning needs go far beyond the technical requirements of the product—equally important are the human elements that far-sighted management and the Engineer work to make an integral part of every business plan. So wise management looks to the Engineer to help weave profit, peace and progress into the fabric of the future.

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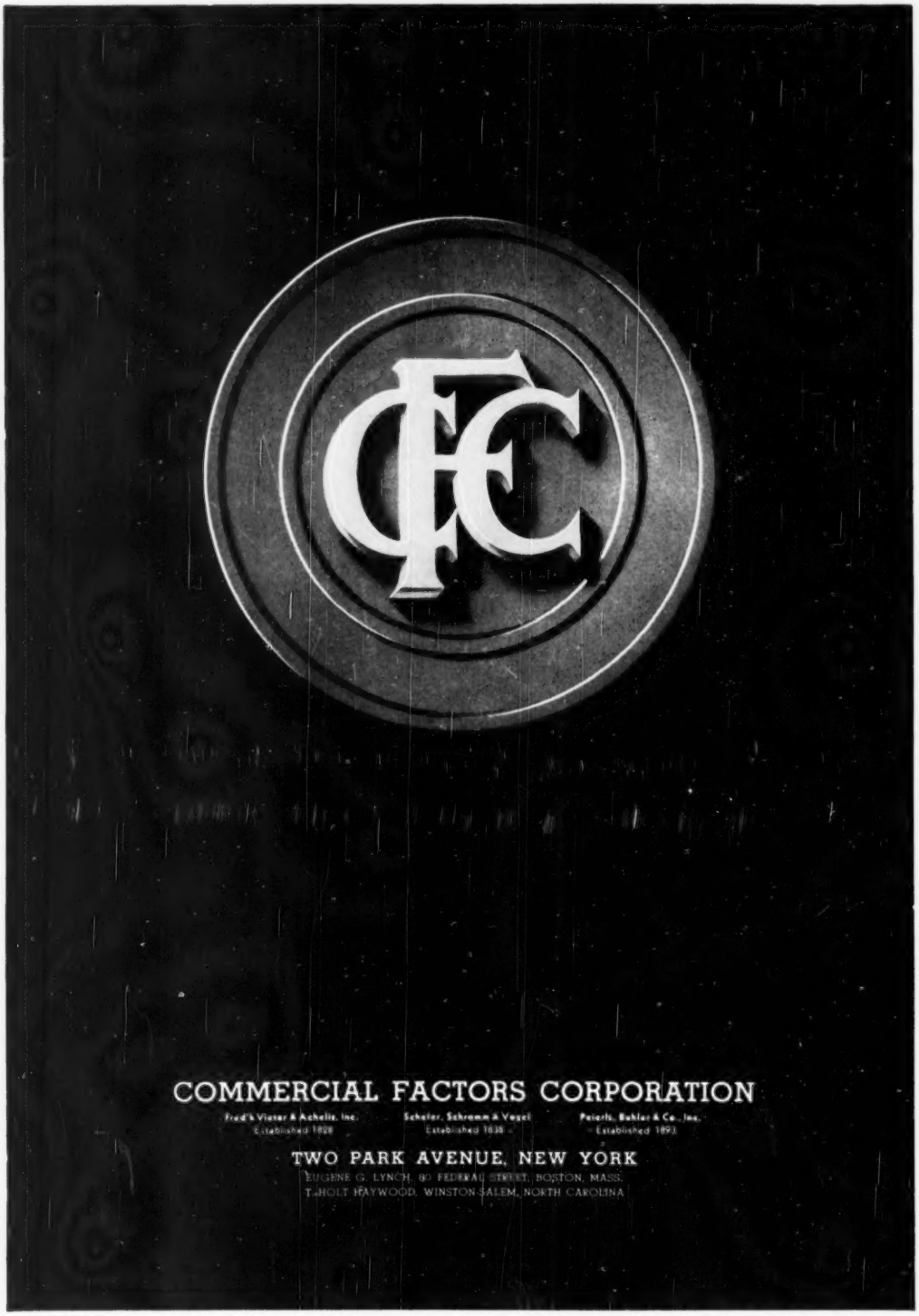

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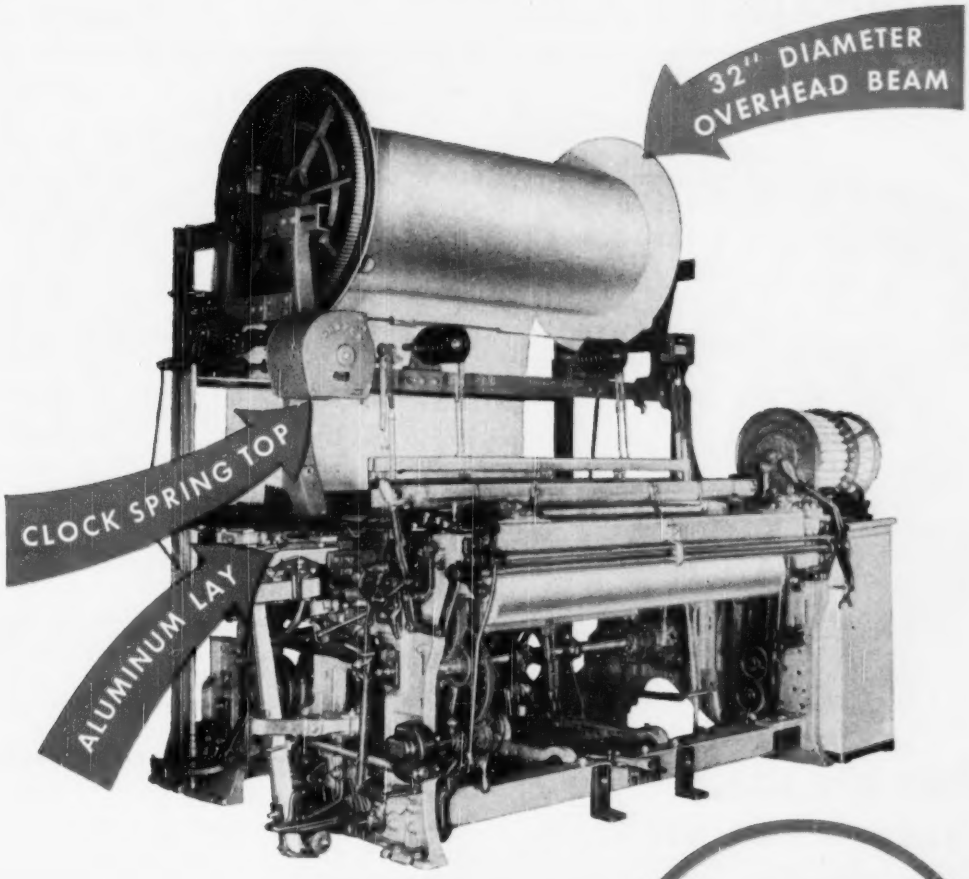
Volume 114 Number 5



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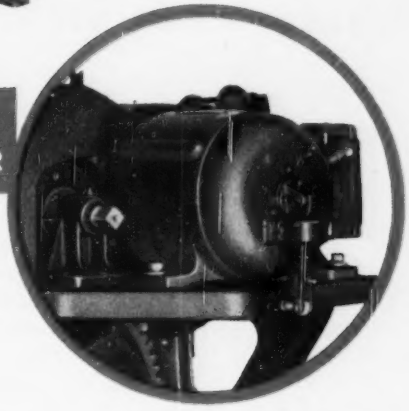

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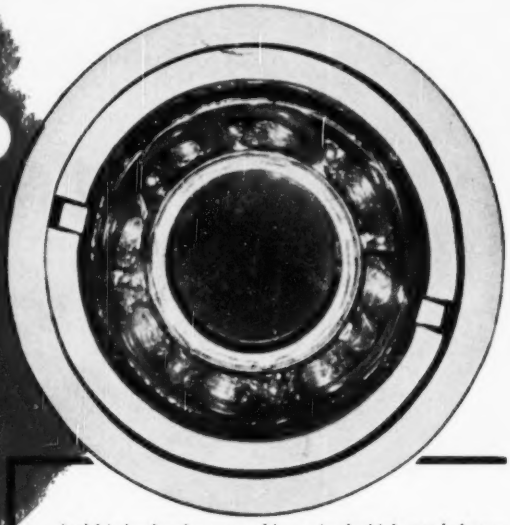

Anti-friction bearing stopped in motion by high-speed photography. At the instant this picture was taken, bearing was revolving at 3750 rpm, and the grease temperature was above 250° F. Note how *Texaco Regal Starfak* completely floods the retainer and moving parts. You can get this same *full* protection for all your anti-friction bearings by using *Texaco Regal Starfak*.

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Textile Industries

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NEW METHOD FOR MEASURING YARN TENSION

Self-contained unit charts variables that affect tension

An improved method of recording yarn tensions has been announced by Avisco's Textile Research Department. The method utilizes a recording strain gauge developed from a basic idea submitted by Saco-Lowell Shops and has been specifically designed by Textile Research Department engineers for both laboratory research and general mill use.

The assembled equipment can be used on nearly any textile machine. It provides a reliable means of charting the results of any variable that affects tension—such as moisture, relative humidity, lubricants, guides and tensions or cyclic variations of twist or strain.

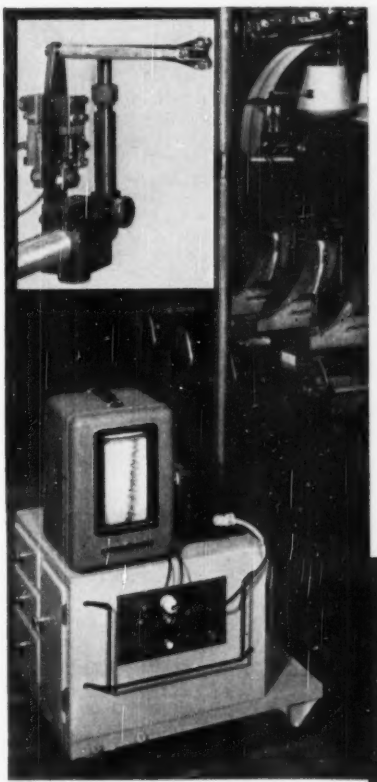
Strain gauge feeds electronic recorder

The tensiometer utilizes means of measurement well established in other mechanical fields. A strain gauge of great sensitivity, but with practically no inertia effect, feeds an electronic recorder.

Seen as adjunct to hand tensiometer

This electronic equipment is not intended to supplant the hand-held tensiometer in every day use. Its greatest use will be to study operations so that safe levels and uniformity of tension can be established. Proper control can then be maintained by use of the smaller devices. Results to date indicate its value in spot checks of various tension devices, finishes and a few operating conditions such as twisting, cake and cone winding, spooling, warping, quilling and tricot knitting. The equipment can also be used for yarn tension measurement on slashers, looms and adapted for use on spinning frames and for some fabric processing machinery.

The recording tensiometer was developed as part of Avisco's continuous program of service to the textile industry. Demonstrations will be arranged for interested parties at the Textile Research Department, Marcus Hook, Pa.



The new tensiometer in operation. Inset photo shows close-up of gauge itself.

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To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

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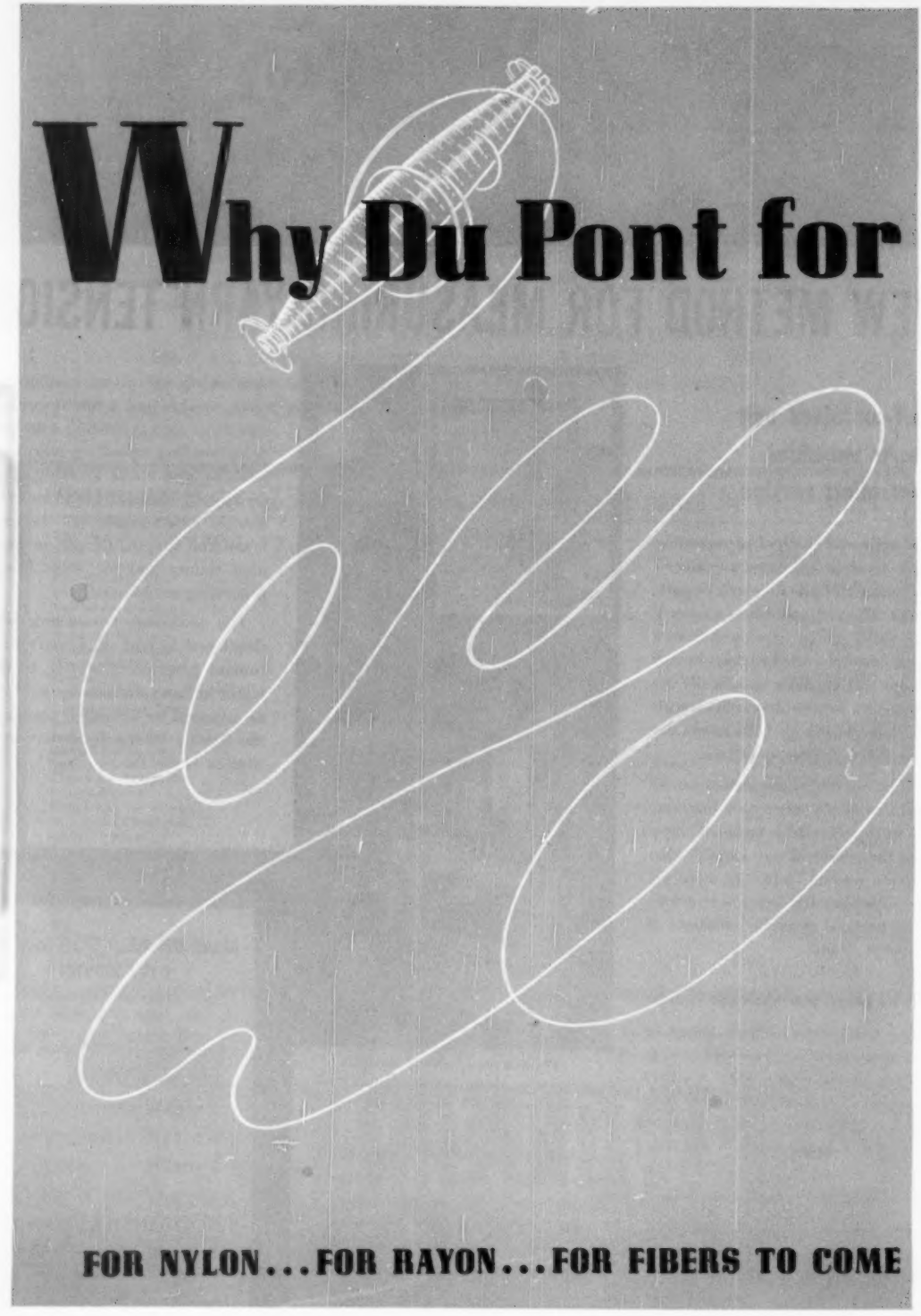
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FOR NYLON...FOR RAYON...FOR FIBERS TO COME

Textile Fibers?

STOCKINGS TO TIRES TO—?

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Ten years ago Du Pont presented America with a new man-made fiber. Through close cooperation between Du Pont technicians and textile mill specialists, nylon proved the right fiber for a thousand and one textile needs from stockings to tires.

And the surface has only been scratched. Almost every day brings new uses for nylon, new fabric constructions, more efficient techniques for handling nylon in the mill, on the cutting table. Nylon is still a fiber with a future. It is still a new frontier for the textile industry; still a challenge for mills that are looking toward tomorrow.

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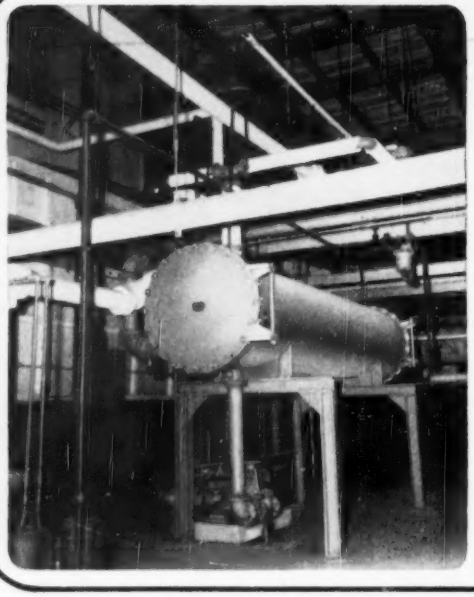

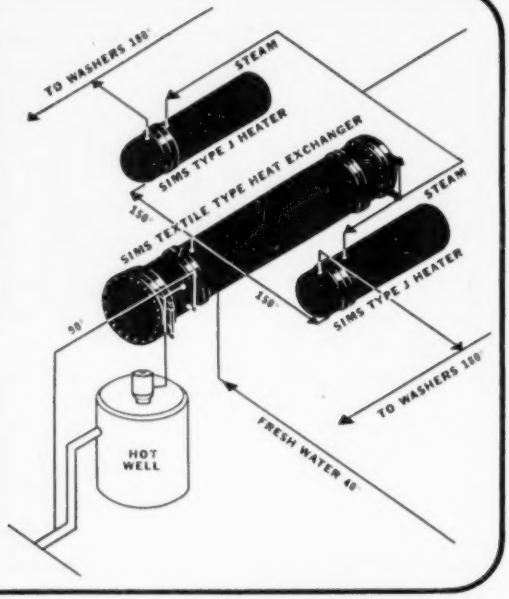

Georgia Textile Plant orders another SIMS HEAT RECOVERY SYSTEM

TAKE time to stop profit leaks in your plant—one of the largest is found in the hot linty sewer waste water. SIMS of Erie has repeatedly proven to Textile plant operators, thru guaranteed savings, that recovered B.t.u.'s mean extra boiler horsepower. Give a SIMS Heat Recovery System your present hot sewer waste—it will deliver 180° fresh water to your washers fueled by recovered heat units. Whether your operations are large or small, if your sewer waste is 120° or over, SIMS of Erie has a real profit service to offer you at no obligation.

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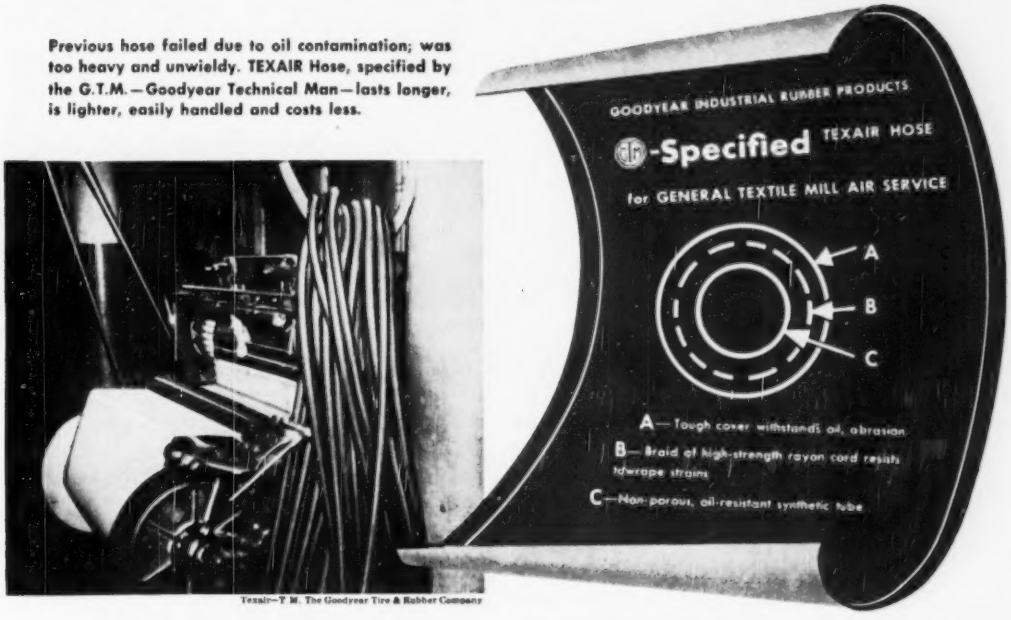
Previous hose failed due to oil contamination; was too heavy and unwieldy. TEXAIR Hose, specified by the G.T.M.—Goodyear Technical Man—lasts longer, is lighter, easily handled and costs less.



Texair—T. M. The Goodyear Tire & Rubber Company

AFTER installing **Texair** hose for cleanup duty, plant superintendent writes that its biggest advantage is lightness that lets the cleanup crew do a full day's work—because they don't tire dragging around heavy hose. Other outstanding advantage is low cost coupled with long life. Get in touch with the G.T.M. to see how you can have these advantages with **Texair**.

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AT SPARTAN MILLS

Brush Uniformity Analyzer grades yarn at Spartan Mills, Beaumont Division, Spartanburg, South Carolina.

BRUSH uniformity analyzer grades yarn accurately and shows you the results!

● Precision yarn grading at speeds up to 10 feet per second is now practical and economical with the new Brush Textile Uniformity Analyzer.

This instrument measures yarn, roving or sliver, from .08 to 150 cotton count . . . and at the same time it automatically provides a permanent, accurate chart recording of weight per unit length, or other similar calibration values. The measurement is independent of moisture content.

With only slight changes in calibration the analyzer may be adjusted to grade other materials such as nylon, rayon, Vinyon and wool, as well as plastic materials and various blends.

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Get the full story of how you can benefit from the accurate measurements and permanent records of this versatile new Brush Uniformity Analyzer. Write today.

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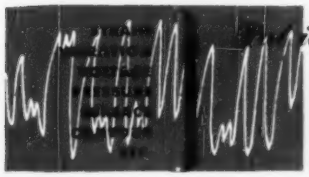

...il in writing with a

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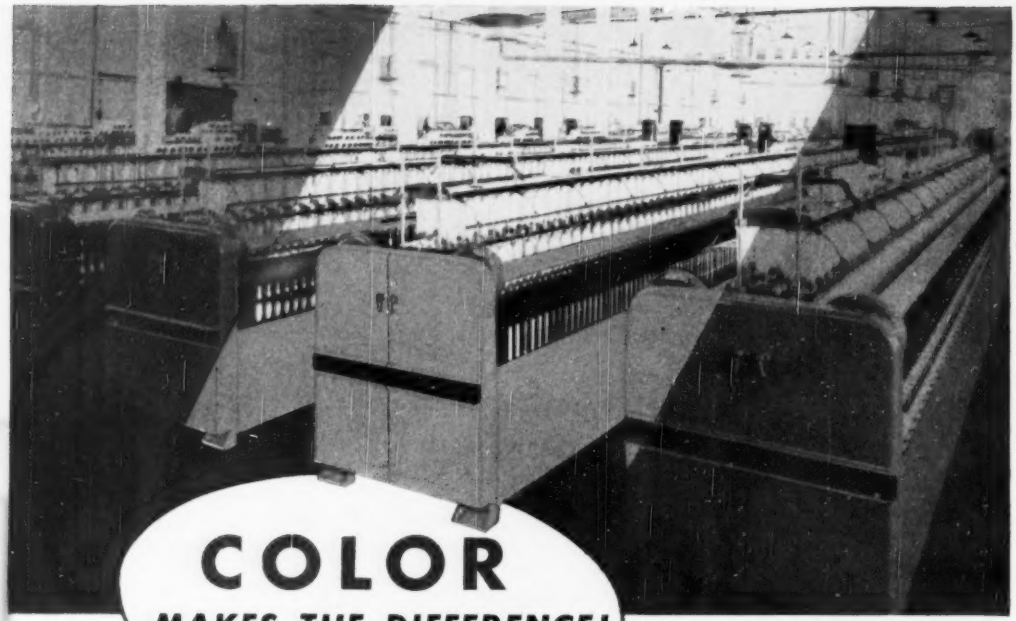

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MAKES THE DIFFERENCE!

SHERWIN-WILLIAMS COLOR HARMONIES
aid SEEING . . . boost PRODUCTION . . . improve MORALE

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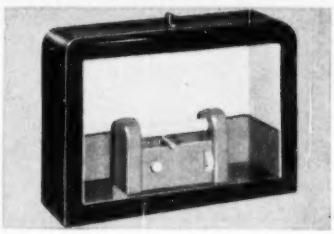
INDUSTRIAL MAINTENANCE FINISHES

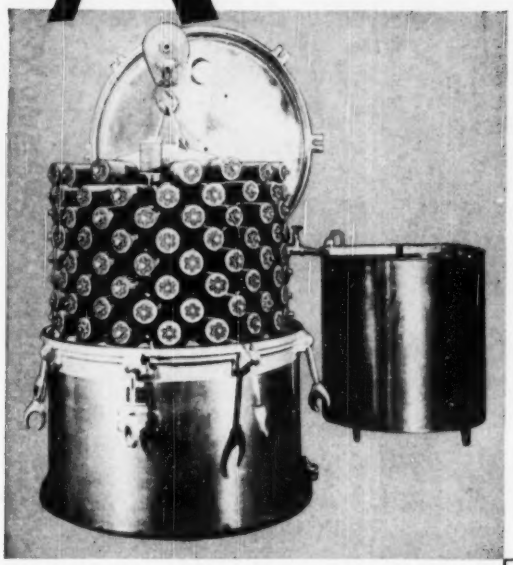


Choose your Color Harmonies from this plant model kit

See, in miniature, what Sherwin-Williams prestudied Color Harmonies for Industrial Plants can do in improving working and seeing conditions. Your Sherwin-Williams representative can show you Color Harmony combinations suitable for your plant requirements with these model plant interior settings.

SAVE-LITE MILL WHITE • COLOR HARMONY FINISHES • MILL VILLAGE PAINTS

ANOTHER "STIENEN" ACHIEVEMENT



THE
Stienen
Reg. Trade Mark

RAYON AND ACETATE PACKAGE DYEING MACHINE

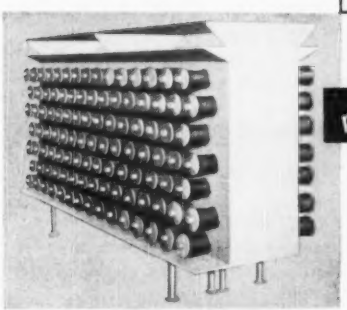
has been developed to supplement our Rayon Cake Dyeing Machine. It provides the dyer of rayon yarns with far greater flexibility.

While our Rayon Cake Dyeing Machine has its distinct advantages for certain mills, the "Stienen" Rayon Package Dyeing Machine is of utmost importance to the entire rayon processing trade.

Package dyeing of rayon is ideal wherever the source of supply is in wound form. Rayon from any size cakes, cones or tubes may be dyed in the package form. Different types of rayon and synthetic yarns may all be dyed in this machine.

The cost of rewinding to the package for dyeing is negligible in comparison to the cost of skein winding. Quality of the original yarn is maintained, as no fibre disturbance takes place in our method of rayon package dyeing.

plus A NEW CENTRIFUGAL EXTRACTOR



plus RAYON PACKAGE DRYER

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BUILDERS OF
Cotton and wool dyeing machines
for beams • packages
raw stock • skeins • rayon cakes
dye spindles • perforated tubes
centrifugal pumps • extractors and dryers

AUSPICES OF NATIONAL ASSOCIATION OF TEXTILE MACHINERY MANUFACTURERS
AMERICAN TEXTILE MACHINERY EXHIBITION ATLANTIC CITY MAY 8-12 1950

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Standard Fabricators
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NOW! There are Du Pont continuous peroxide bleaching systems for every production requirement ▶ ▶ ▶

Now is the time to plan for bleaching modernization. Your production can be met by a Du Pont Continuous Peroxide Bleaching System which can be designed and built to your specific requirements by prominent textile machinery manufacturers. Look into these systems. You'll find them:

1 **Just what you need for continuous quality bleaching at lower over-all cost.**

2 **Flexible, readily adapted to speedy, economical, uniform processing.**

3 **Easy to set up, operate and control.**

Although Du Pont does not build or sell equipment, an analysis of your bleaching requirements and assistance in laying out a system to meet your specific needs can be obtained from Du Pont Technical Service. Technical Service Representatives, located in important textile centers, are available for assistance in starting operations and training of your technical and operating personnel.

DU PONT

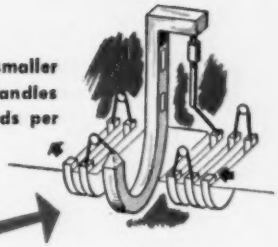
DU PONT CONTINUOUS PEROXIDE BLEACHING

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Pick one of these Du Pont CONTINUOUS systems to meet your bleaching requirements

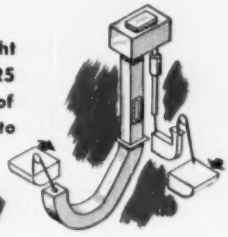
500 lbs./hr.

Extremely compact single-stage unit for the smaller plant or for specialty bleaching in larger plants. Handles cloth continuously at average rate of 50 yards per minute. Two-stage unit is also available.



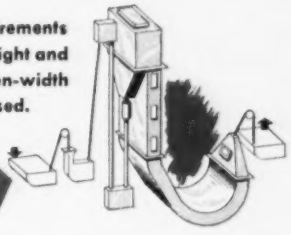
900 lbs./hr.

Flexible arrangement permits installation as straight line or grouping around "J" Box. Requires only 325 to 500 sq. ft. floor space. Handles 25 to 125 yards of cloth per minute. Matched units can be added to increase capacity.



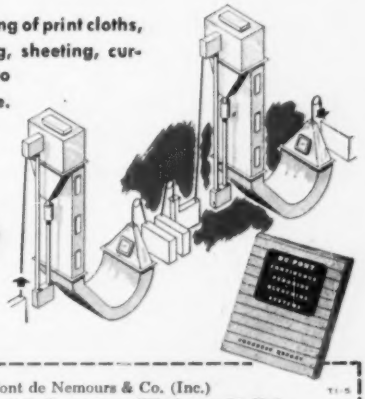
1500 to 3000 lbs./hr.

An excellent arrangement for production requirements of 200,000 to 400,000 yds. weekly. Handles light and heavy constructions. Also available in open-width design for goods that cannot be rope-processed.



3000 to 10,000 lbs./hr.

Recommended for large-scale bleaching of print cloths, terry toweling, colored yarn, shirting, sheeting, curtain material, etc. Can be designed to process up to 350 yds. per minute. Open-width design also available.



DU PONT SYSTEMS are available from the following equipment manufacturers:

H. W. Butterworth & Sons, Philadelphia, Penn.
Cook—P & N Machine Co., Boston, Mass.
Greenville Steel & Foundry Co., Greenville, S. C.
Rodney Hunt Machine Co., Orange, Mass.
Wiesner-Rapp, Inc., Buffalo, N. Y.
Sir James Farmer Norton, Ltd., Manchester (England)

SEND FOR THIS BOOKLET giving more information about these systems, typical designs, illustrations and data about installations in leading textile mills. Just clip the handy coupon.

E. I. du Pont de Nemours & Co. (Inc.) TI-5
Electrochemicals Department, Wilmington 98, Del.

Please send me more information about Du Pont Continuous Peroxide Bleaching Systems.

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New Methods FOR New Fabrics

IN NYLON HEAT-SETTING BROWN SPECIALIZED INSTRUMENTATION SETS THE PACE!

THE heat-setting of nylon is typical of the tough control jobs that Brown instruments are handling throughout the Textile Industry.

Because of the critical nature of the process, temperature variations must be held to an absolute minimum . . . to obtain optimum setting results without physical damage. Leading manufacturers of the specialized heat-setting machinery have standardized on Brown instruments. And, actual records now offer conclusive proof that temperatures *are being held within 2° F of the control point* during production runs. This is a tribute to machinery and instrumentation engineering.

Brown Specialized Instrumentation for the Textile Industry Is Setting New Standards for High Quality, Low-Cost Production!

For a profitable discussion of the outstanding results these instruments can bring to your plant, call in your local Honeywell engineer . . . he is as near as your phone!

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COLOR SELLS TEXTILES

Quality KEEPS THEM SOLD

The life of a style cycle can be prolonged by QUALITY. That is why many manufacturers of knitted fabrics are now using Franklin Process Fast Color Yarns.

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LARGEST PACKAGE DYERS IN THE WORLD

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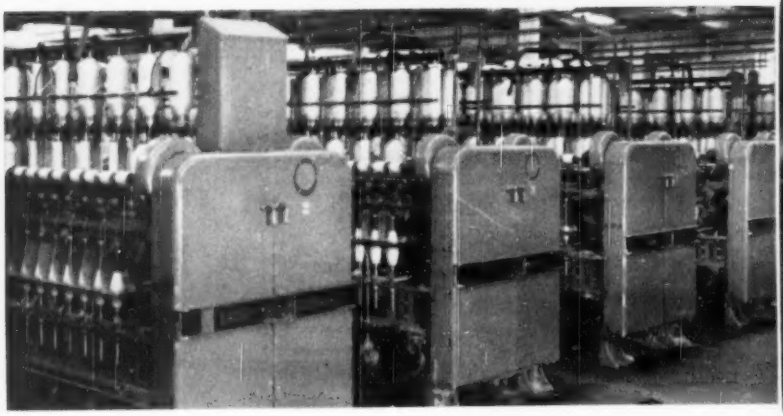
Only HERR *makes the* "CONICAL RING"

COLLINS & AIKMAN CONSIDER THEM A "MUST" IN THE MANUFACTURE OF UNIFORM YARN



"The self-lubricating principle of the Herr ring is advantageous in the manufacture of uniform yarn, gives low end down results and facilitates spinning on a large package."

H. J. BLANCHARD, Resident Manager
Collins & Aikman Corp., Norwood, N. C.

The satisfactory experience of Collins & Aikman Corporation is just one of a host of mills throughout the industry . . . mills where the production of uniform quality yarn on an efficient basis reflects good management and personnel.

We invite you to see our complete line of Herr CONICAL Rings and Flyers at booth 84-85 Atlantic City Show—May 8-12. Herr CONICAL Rings can be seen at Saco-Lowell Shops exhibit in operation running on their Draft-All Spinning Frame. Also at the Whitin Machine Works booth running on an F-2 Whitin Spinning Frame designed for worsted yarns and blends on the American system.

HERR MANUFACTURING CO., Inc.

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BIG ADVANTAGES

where mildew formation is a problem

1 EFFECTIVE MILDEW RESISTANCE

Here's the enamel especially formulated to meet the demand for all mill white with resistance to mildew and other fungous growth. DULUX Mildew-Resisting Mill White contains an inhibitor that is extremely toxic to mold formation . . . yet non-irritating and harmless to painters and workers. It's ideal for mill interiors where moisture condensation and poor air circulation combine to foster the growth of mildew and other fungus.

2 LASTING WHITENESS RETENTION

DULUX Mildew-Resisting Mill White is unsurpassed for whiteness and gloss retention. It starts white, stays white . . . gives *years* of protection without perceptible yellowing. It covers walls and ceilings with a hard, tile-like surface that is easy to keep clean because it repels dirt and dust collection.

3 FAMOUS "DULUX" PERFORMANCE

This special mildew-resistant formulation gives you all the outstanding qualities and performance of regular DULUX enamel. It stands up under hard knocks and staining from oil and grease. In application, it goes on smoothly, covers well, possesses unusual hiding power. All in all, DULUX Mildew-Resisting Mill White is the perfect answer to the demand for an enamel that offers *long* life with a *minimum* of maintenance.

Why not talk over your maintenance painting problems with a Du Pont expert today? To get in touch with him, write E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Dept. T.I.-95, Wilmington 98, Delaware.

DU PONT PAINTS

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Cotton Rolls
Cotton and Wool Rolls
Combination Rolls
Husk Rolls
Paper Rolls
Embossing Rolls
Fiber Conditioners

Friction Calenders
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Chasing Calenders
Rolling Calenders
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LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

Here's the Man who'll give You the Facts on

MITIN

DURABLE MOTHPROOFING

He's a Geigy specialist thoroughly trained in the various methods of applying MITIN to woolens and worsteds. He'll demonstrate these simple methods in your own mill . . . show you the versatility of MITIN in application during different phases of mill processing . . . explain the Geigy method for protecting your good will through regularly spaced tests of your mill runs in Geigy's modern biological and entomological laboratories.

Buyers and merchandisers everywhere are learning about MITIN mothproofing . . . about the powerful sales stimulant provided by this ultra-modern protection for woolen goods of every kind!

So you will want this Geigy specialist to call. You'll want ALL the facts about MITIN *durable* mothproofing . . . because every day, now, brings closer the moment when you'll be asked to deliver an order mothproofed with MITIN.

A FEW QUICK FACTS

MITIN is a scientifically conceived, durable mothproofer (U. S. Pat. #2,311,062).

It is now presented only after passing Tentative Test Methods AATCC, and long, practical use in Europe, Great Britain and Canada.

Applied simply, in mill processing only, usually with the dyestuff.

Moderate Prime Cost is the only cost.

Harmless to woolens and wearers.

Periodic control tests of mill runs provided in our Bayonne, N. J., laboratories.

Mothproofed with MITIN

MITIN With the Dye Makes the Public Buy

Ask to see the Geigy specialist. He'll call promptly on request. He wants you to be armed with the necessary know-how . . . ready when you are asked to mothproof with MITIN.

Geigy

Dyestuff Makers Since 1859

GEIGY COMPANY, *Inc.*

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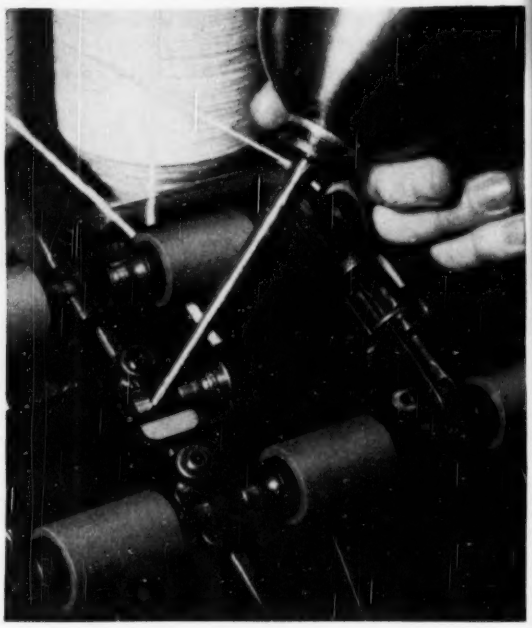
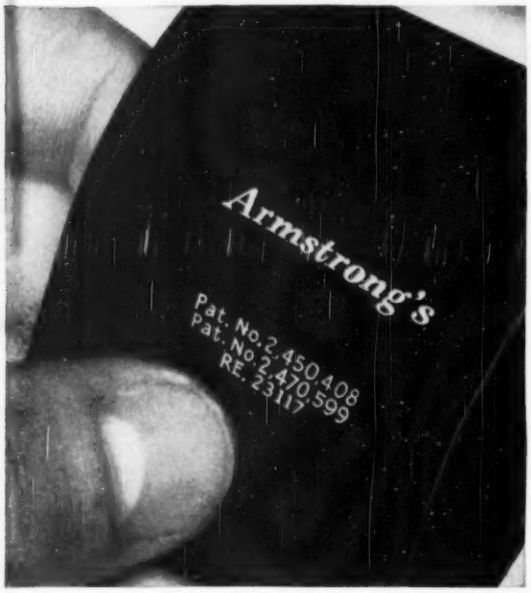
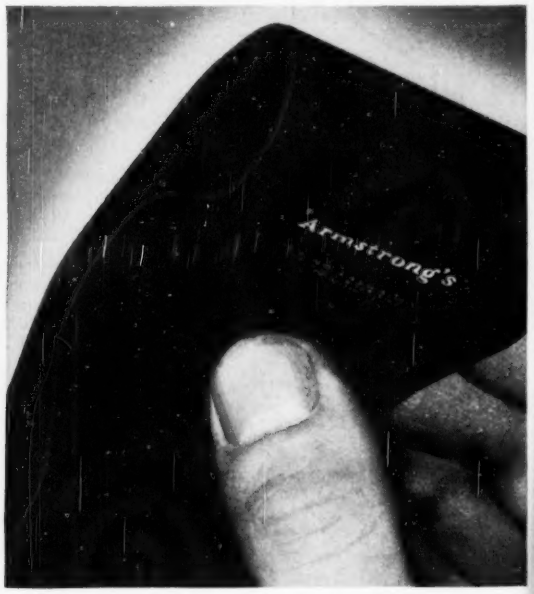
SEAMLESS. Smooth continuous layers of Accotex rubber on both inside and outside of Accotex Aprons prevent irregular slip roll action. These resilient wearing surfaces can never crack or break.



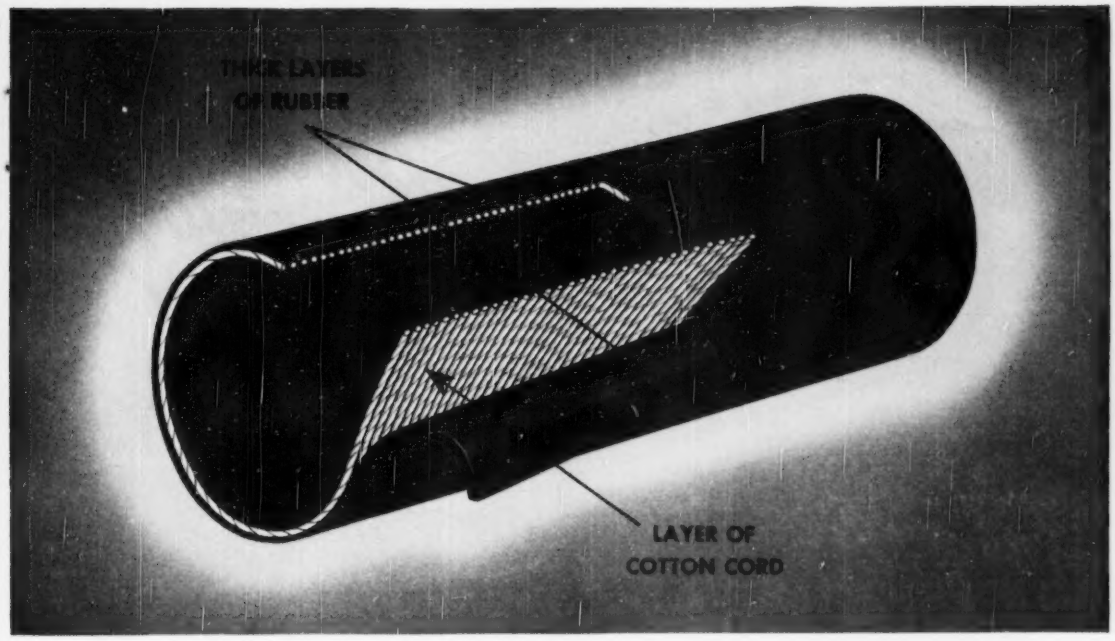
UNAFFECTED BY OIL, TEMPERATURE, OR HUMIDITY. Oils, dyes, and solvents have no effect on Armstrong's Accotex Aprons. They operate efficiently at any mill temperature, and they won't sweat.



SATIN FINISH. Accotex Aprons are ground to the exact thickness you specify and finished to satin smoothness by a special process developed and patented by Armstrong. They never roughen.



SUPERIOR FLEX LIFE. Made of a non-oxidizing synthetic, Accotex Aprons never lose their "live" rubbery resilience, never become brittle with age. They run smoothly over the nose bar year after year.



Aprons made like this have been running for 6 years

Armstrong's Accotex® Aprons installed six years ago are still giving continuous, trouble-free service. A look at the cutaway view shown above helps explain why this is true.

First, there is the layer of tough synthetic rubber on the inside and outside of every Accotex Apron. These layers are seamless, so they can't crack or break open. Then, there is the sturdy cord interliner, permanently vulcanized between the rubber layers. This cord reinforcement absolutely prevents stretching and curled edges.

This construction, developed and patented by Armstrong, eliminates all the structural weaknesses that normally cause premature apron failure. Consequently, Accotex Aprons virtually eliminate apron maintenance. They stay on your frames, giving year after year of trouble-free, top-quality spinning.

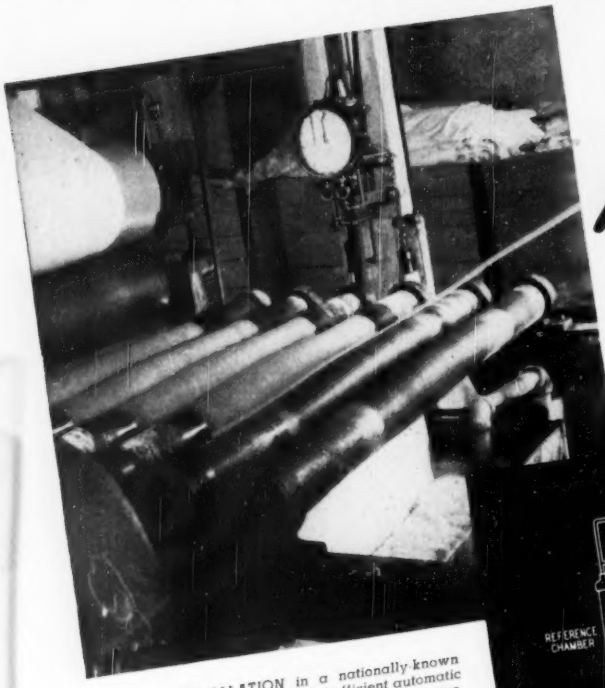
Besides long life, this special cord and rubber construction gives Accotex Aprons superior flex life, satin smoothness, and the other desirable apron features illustrated at left.

Accotex Aprons are available in a complete range of sizes. They fit all single and double apron long draft spinning and roving frames.

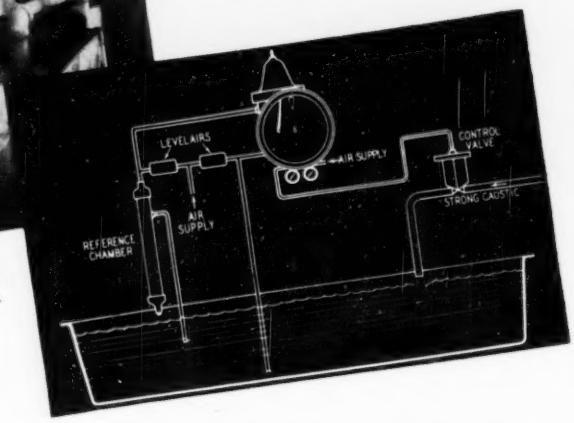
You can easily arrange to see Accotex Aprons demonstrated in your own mill. Just call your Armstrong representative today or write Armstrong Cork Company, Textile Products Department, 3605 Arch St., Lancaster, Pa. Accotex Aprons are available for export.

ARMSTRONG'S ACCOTEX APRONS

THIS CLOSER CONTROL OF CAUSTIC DENSITY



Boosts Mercerizing Efficiency



THIS INSTALLATION in a nationally-known finishing plant has provided efficient automatic control of caustic density for nearly four years. Diagram illustrates its basic principle.

Here's a simple, *completely automatic* density system developed and patented* by Foxboro for controlling the strength of the saturating bath. Proved in actual operation, it not only improves the mercerizing finish, but also assures a uniformity of product that cannot be obtained by manual control.

In addition, this foolproof control system reduces chemical cost by avoiding excessively high concentrations of caustic, and it eliminates the toil and inaccuracies of hydrometer sampling and log-keeping. Installation is easy on new or existing equipment.

Why not find out how these and other benefits of Foxboro Density Control can improve mercerizing in your mill? Talk it over with your nearby Foxboro Field Engineer, or write **The Foxboro Co., 18 Neponset Ave., Foxboro, Mass., U.S.A.**

*Patent No. 2,394,549

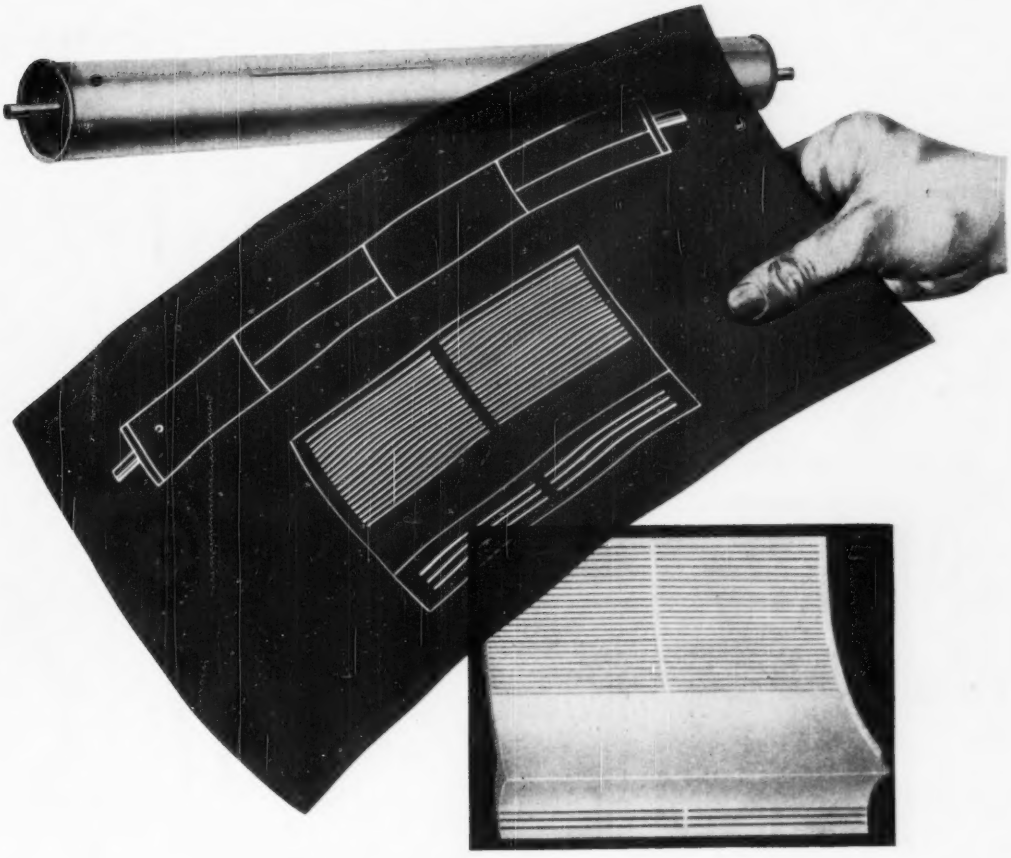
For maximum mercerizing efficiency and top quality product, the following additional controls may be used as required by the individual plant:

1. *Foxboro Level Control of water feed to saturating bath.*
2. *Foxboro Pneumatic Loading Control of squeeze rolls.*
3. *Foxboro Temperature Control of hot water wash.*
4. *Foxboro Remote Manual Control with automatic shut-off of flow of hot water wash.*
5. *Foxboro Temperature Control of steam to recouperator.*
6. *Foxboro Conductivity Control of acid to souring-off bath.*

See Foxboro Density Control in operation at Atlantic City. May 8-12—Booths 451-2.

FOXBORO REG. U. S. PAT. OFF.

INSTRUMENTATION
INDICATING · RECORDING · CONTROLLING



ENGINEERED Products are CHEAPER in the long run

Jenkins engineered thinking has resulted in the development of engineered equipment to produce spinning cylinders and card screens so advanced in design and construction they

LAST NOTABLY LONGER GIVE SMOOTHER PERFORMANCE INCREASE PRODUCTION

IMPROVE YARN QUALITY LOWER COSTS

Put Jenkins products to the test in your mill and you'll get the *new efficiencies* so essential to meet the growing demand for higher quality and lower cost.

When you come to Jenkins, you benefit from more than 38 years of constant experimentation and precision workmanship that has resulted in dynamically balanced cylinders. die-cut and die-formed cylinders, new, improved card screen cylinder bars and many other product improvements.

JENKINS METAL SHOPS GASTONIA, N. C.

DEVELOPERS AND EXCLUSIVE MANUFACTURERS OF DYNAMICALLY BALANCED CYLINDERS

Here's How "Selective Cross-Breeding"

produces the Big Winner in Rayon Looms!

C&K's S-6 LOOM . . . 2x1 box, bobbin-changing, with vacuum filling control for nylons, rayons, combinations or pure silks...is a highly developed thoroughbred resulting from the "cross-breeding" of desirable features of older bobbin-changing looms and newly engineered developments.

Put this loom in your weave room. "Groom" it with C&K's settings. "Saddle" it with properly prepared warp and filling. Select a "jockey" you know is suitable. Then "it's off to a win"...producing finer fabrics at higher speeds and at lower costs than you ever imagined possible.

10,000 S-6 Looms in service are writing an impressive story. Get this story in terms of *your* fabrics. Write to C&K today.

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Woven Fabrics

Crompton & Knowles Loom Works

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BOOTHS 323-338

Syntho-Softener

For Full-Bodied Softness...
Smooth Mellow Hand...
Rich Drape...

Here's an easy-to-handle, substantive synthetic softener in the form of a soft, cream-colored paste.

Syntho-Softener...

assures a soft, full bodied, velvety hand with maximum draping qualities for use on cotton, rayon, acetate, Bemberg, wool and nylon fabrics.

Write today for samples and a copy of the Syntho-Softener technical data sheet.

Syntho-Softener
ELIMINATES TROUBLE!

1. No effect on shade of dyed goods.
2. No yellowing of whites.
3. No rancidity on aging.
4. No discoloration on pressing.
5. No loss of light-fastness of dyed goods.

Hartex Products:

Rayon Oils & Sizes	Conditioning Agents	Cationic Softeners
Nylon Oils & Sizes	Scrooping Agents	Cotton Warp Dressings
Kier Bleaching Oils	Splashproof Compounds	Wetting-Out Agents
Finishing Oils	Delustrants	Weighting Agents
Synthetic Detergents	Leveling Agents	Mercerizing Penetrants

HART PRODUCTS

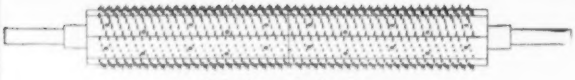
based on research

THE HART PRODUCTS CORPORATION
1440 BROADWAY, NEW YORK 18, N. Y.

NON BREAKABLE

STEEL CYLINDERS

Main Cylinder



Worker Cylinder

Will Not Crack Regardless of Speed

SAFE — Constructed of steel throughout.

SIMPLE — Need no under lagging. Lags bolted direct to steel cylinders.

TROUBLE-PROOF — Pins cannot back out. Sealed in at ends. No lint accumulation.

EFFICIENT — Dynamically balanced. Smooth operation.

We engineer Steel Cylinders to your exact requirements. Write today for full details.

Made in any diameter 3" to 63".
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Cotton Picker and Shoddy Picker Cylinders A Specialty. Delivery now 120 Days.

WILLIAM CRABB & COMPANY • 301 Third Ave., Newark, N. J.

Wool Oil Efficiency?

What is ↑

Put this question to a group of textile men and you'll get a variety of answers.

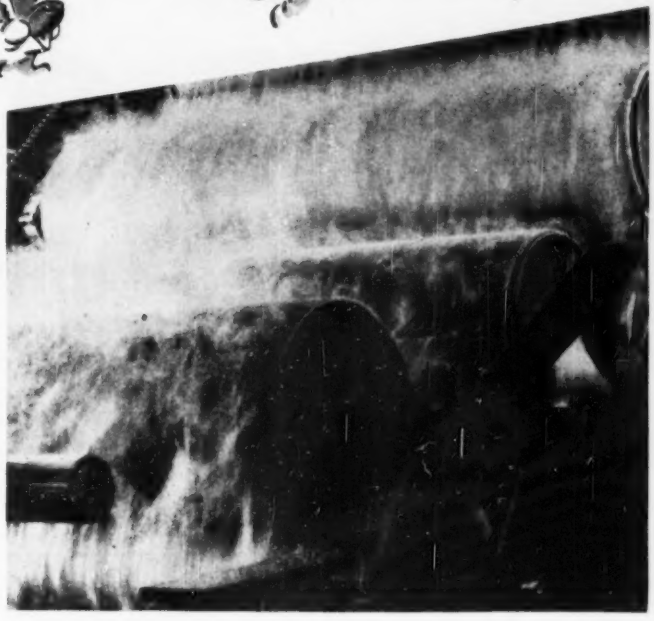
Easy scouring

Stable emulsions

Good lubricating properties

Static-free

Easy to apply



But they'll all agree on one essential—***the oil must undergo no change in storage.*** It must not heat up, develop unpleasant odors, or discolor. And it must scour easily, regardless of the storage period.

That's something you can bank on when your mill starts using Proxol!

PROCTER & GAMBLE PROXOL MADE IN U.S.A.

• *made by the makers of Olate the industry's leading all-purpose textile soap...*

Proxol undergoes no change when it's on your raw wool, yarn or fabric. It won't heat up in storage. You won't have to worry about odor or discoloration. And Proxol scours out easily.

You'll discover plenty of additional advantages when you start using Proxol. Why not start now?

Procter & Gamble CINCINNATI, OHIO

NOPCO* 1656-R
THE ONE
Worsted Lubricant That ELIMINATES STATIC

Application: Top or Pin Drafter

Write for Details

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EVOLVED THRU RESEARCH

NOPCO CHEMICAL COMPANY
Formerly National Oil Products Company
HARRISON, NEW JERSEY
Branches: Boston • Chicago • Cedartown, Ga. • Richmond, Calif.

*T. M. Reg. U. S. Pat. Off.

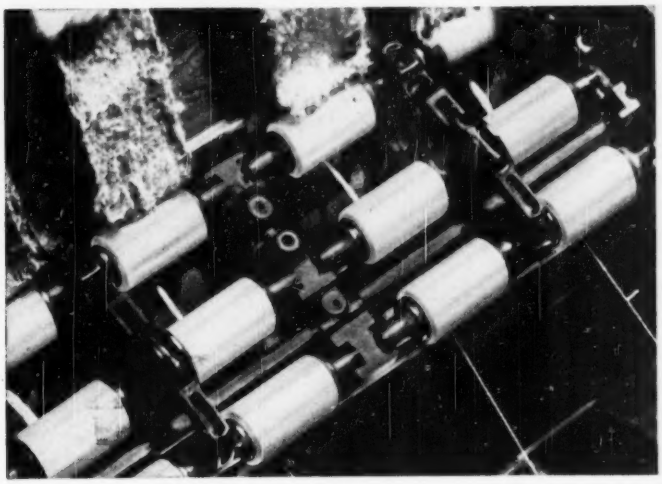
Columbus discovers

Dayco Roll Coverings

are 12 times better!

Here's a testimonial from a Columbus, Georgia mill, of the extraordinary performance to expect when you switch to Dayco Roll Coverings.

This mill ran 30,000 spindles using 210,000 fabricated cots during a 26 month period. During the same time, under the same conditions, only *21,000 Dayco Cots* were used on 36,000 spindles! Only 1 Dayco Cot for every 12 competitive cots!



Why did Daycos prove 12 times better! Rigid control of the synthetic rubber compounds insures uniformly correct surface texture, cushion, friction. It makes Dayco oilproof, static-free, weather-proof, unaffected by hard ends. One-piece construction. Won't groove, hollow out, flatten or distort. Resist eyebrowing. Handle synthetics and blends easily as cotton. Give up to 35.8% fewer ends down, virtual elimination of lap-ups.

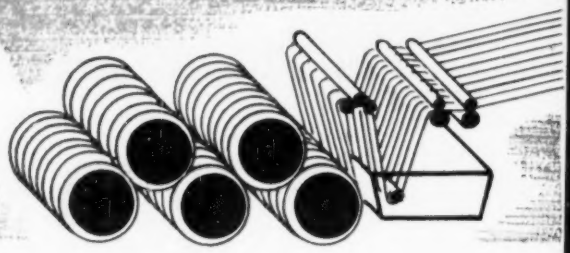
Why not discover Dayco Coverings for yourself, and save thousands in cot costs? Built to your exact specifications in any design and size. For more information write:

THE DAYTON RUBBER COMPANY
Textile Division
Woodside Bldg., Greenville, S. C.

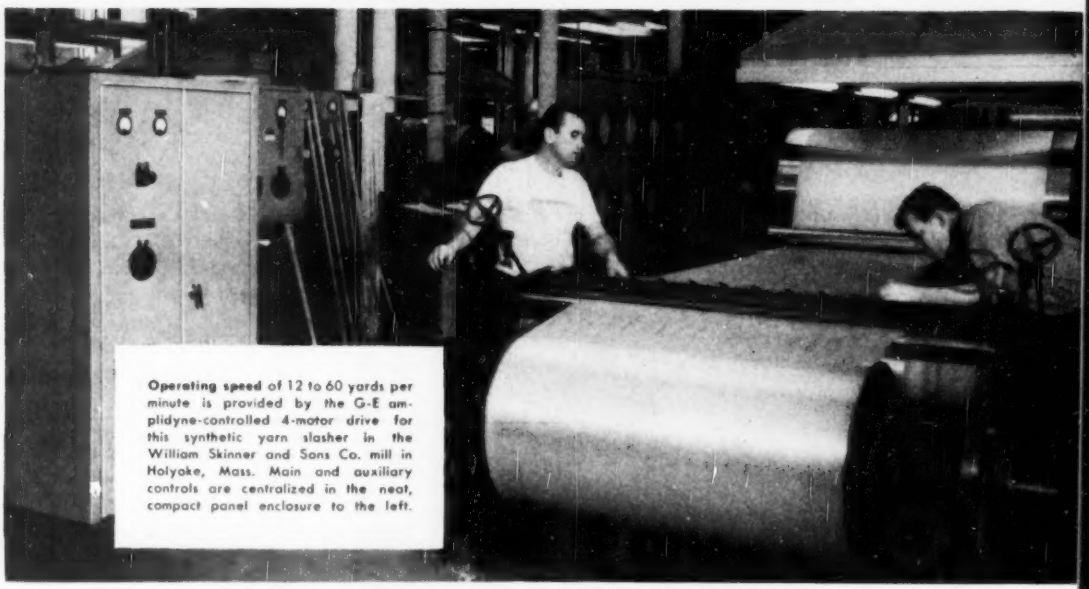
Dayton Rubber

TEXTILE PRODUCTS FOR BETTER SPINNING AND WEAVING

FROM CREEL BEAMS... TO WARP BEAM



JUST THE RIGHT TENSION



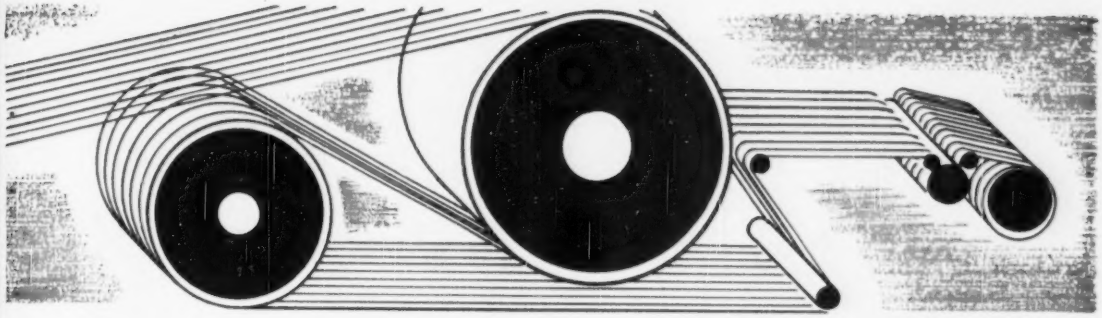
Operating speed of 12 to 60 yards per minute is provided by the G-E amplidyne-controlled 4-motor drive for this synthetic yarn slasher in the William Skinner and Sons Co. mill in Holyoke, Mass. Main and auxiliary controls are centralized in the neat, compact panel enclosure to the left.

Advantages? Just look at these!

- You can adjust tension and speed to suit any yarn.
- Once selected, desired tension is maintained automatically throughout beam build-up.
- A simple rheostat adjustment keeps yarn tension low between size box and dryer.
- You can easily pre-set running and creeping speeds.
- Tension variations and yarn damage are prevented by the drive's exceptionally smooth acceleration and smooth, fast deceleration.
- You can easily tie-in automatic moisture controllers to the drive, if desired.
- All main control equipment is centralized in one control panel, with remote operating controls located within easy reach at the slasher.
- You eliminate the need to maintain line shafting, mechanical speed changers, and slip clutches.

GENERAL ELECTRIC

654-6



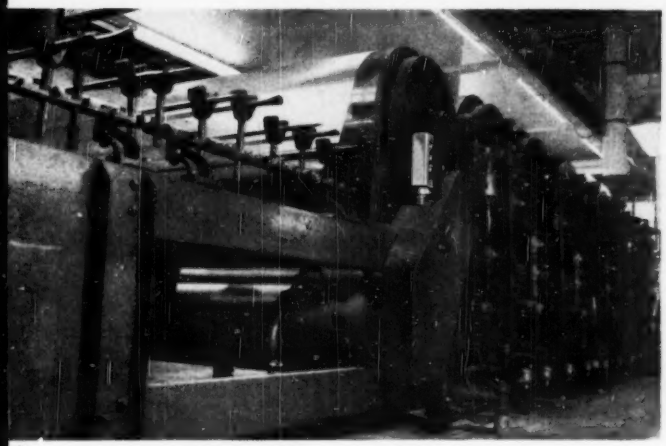
-held automatically!

With a G-E MULTI-MOTOR SLASHER DRIVE you get uniform, high-yardage warps, fewer ends down at the loom, higher weave-room efficiency!

Here's the modern way to the better-quality warps you need for today's higher weaving speeds—a General Electric multi-motor slasher drive with amplidyne control. It provides *automatically* the tension you want for most efficient slasher operation, minimizes dependence on "feel" and "guesswork." That means you all but eliminate broken warp yarns, soft spots in the beam, and irregularities in yarn tension. Result: stepped-up efficiency in your weave shed!

With this G-E drive, a uniformly low tension maintains elasticity in the yarn while it passes through size tank and drying cylinders. At the beam, tension is automatically increased to the value you select to produce maximum yardage warps.

Planning to modernize? See your G-E textile-mill specialist. If it's a new slasher installation that's on your mind, be sure to discuss this G-E drive with your machinery manufacturer. For more data on G-E slasher drives, write for Bulletin GEA-5259. *Apparatus Department, General Electric Company, Schenectady 5, N. Y.*



As seen from the windup end, one of four G-E 1½ hp gear motors is here shown driving the drying cylinders. The conveniently-placed remote-control push-button station above it permits operator to start and stop the drive from the drying section.

See "Textiles Unlimited"

It's General Electric's new full-color sound movie on how textile mills are modernizing. Chock full of ideas you can use on improving product quality and cutting costs, it covers such subjects as lighting, air conditioning, power distribution, machine drives, quality control, new processing methods, and many others. Ask your G-E representative to arrange a showing of this More Power to America production for your organization.

GE DRIVE SYSTEMS FOR TEXTILE MILLS

You have a Packaging Problem...

The fast pace of today's business causes most manufacturers to have a packing problem in one phase or another. New product designs—new production line techniques—new marketing area developments and competitive conditions make it necessary for you to constantly review your packing and shipping operations.

Gaylord Container Corporation is staying on top of these changing conditions and aiding their customers through constant, thorough field research and new manufacturing developments. Gaylord can help you.

CORRUGATED AND SOLID FIBRE BOXES

FOLDING CARTONS

KRAFT PAPER AND SPECIALTIES

KRAFT BAGS AND SACKS

Just call the Gaylord office nearest you . . .

GAYLORD CONTAINER CORPORATION

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SANDOZ PRESENTS
the color achievement of the month

Cherry Red

...BY BOTANY

The truly spectacular colors... the ones that suddenly burst into high fashion popularity like a new show tune generally require unusual dyes.

For example: the Skipper Blue of 15 years ago... the Kelly Green of recent years... and now the Cherry Red as illustrated above in "Botany" Brand Marchan, a classic, lustrous wool worsted.

Mills like Botany have experienced best success in matching these shades by using such fast-to-light colors as Sandoz':

ALIZARINE LIGHT BLUE R
ALIZARINE LIGHT BLUE SE
XYLENE FAST RED BL

Then there are the more standard colors like the camel-hair shades on coating fabrics, made from Sandoz':

ALIZARINE LIGHT BROWN BL

and the newest and brightest violets, which can now be made fast-to-light with Sandoz':

ALIZARINE LIGHT VIOLET RCN

These colors, in addition to giving the consumer superior light fastness, are well liked by dyers and finishers for their level-dyeing qualities.

For *any* chrome, acid or direct dyes... or auxiliary chemicals... for both natural and synthetic fibres... be guided by the successful "color achievements" you see in these Sandoz advertisements.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N.Y.
Application laboratories and stocks at Boston, Philadelphia, Charlotte, Chicago, Los Angeles, Toronto • Other branches at Providence, Paterson and Montreal

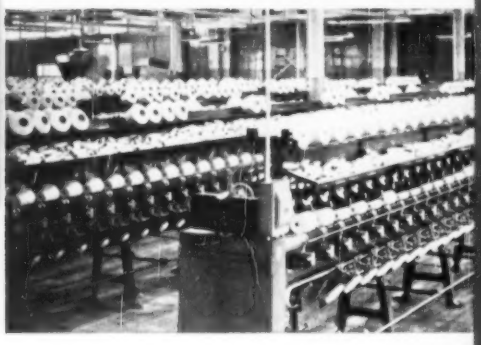
SANDOZ *thinks ahead with textiles*

This is spun nylon. Density of the cone is uniform and minimum throughout, with no hard ends. Underwinds are eliminated. There are no roll-cuts.

But whether the yarn is spun nylon, spun rayon, cotton, worsted or any other staple fibre, soft or abrasive . . . to be dyed, twisted, warped or knitted . . . the packages wound on the Roto-Coner* winder look as well, perform as well, on the next operation.

wind High-Quality *packages*

on the Low-Cost *winder*



The high winding speed of this drum winder means more, lower-cost production. Efficient yarn inspection improves quality and saves the expense of interrupted production later on. And, since the exclusive rotary traverse eliminates cams and reciprocating guides, repairs are slight; maintenance averages ½-1% a year on investment.

Investigate the Roto-Coner* winder, selected more often than any other for modern installations. The size of the supply package is not limited, and the winder can be equipped for a variety of work by means of special attachments.

UNIVERSAL WINDING COMPANY

P. O. Box 1605 • Providence 1, R. I.

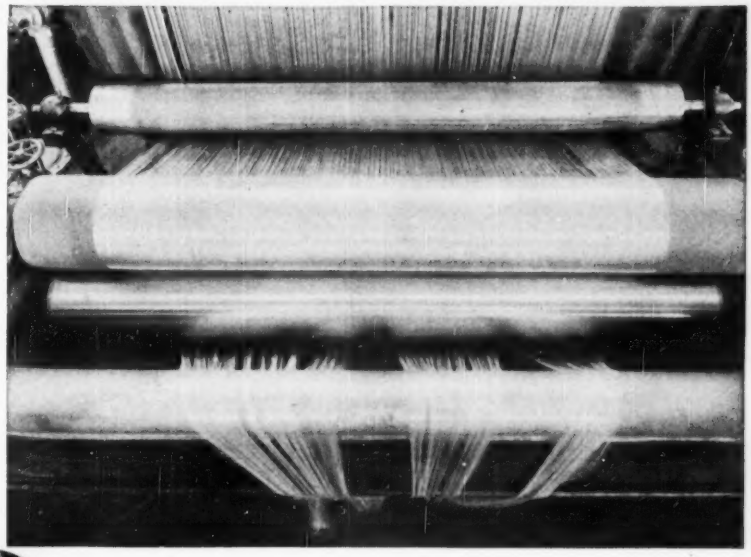
Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles; Montreal, Hamilton, Canada; Manchester, England; Paris, France; Basle, Switzerland

Agents in every principal textile center throughout the world

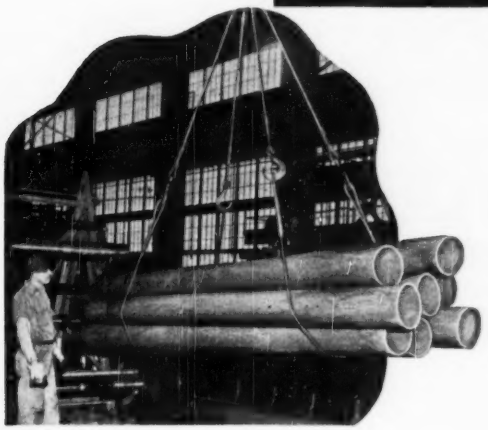
ROTO-CONER WINDER* *The Textile Winder with the Rotary Traverse*

Make Slasher rolls from Seamless MONEL tubing

The easy way!



Monel covering eliminated the need for frequent refinishing of these rayon slasher rolls. Rolls such as these can now be made from Monel extruded tubing subsequently machined to finished size.



Lifting a load of extruded tube shell at Inco's Huntington, W. Va. mill. Monel, Inconel, and Nickel seamless extruded tubing is now available in outside diameters up to 9¼".

EMBLEM OF SERVICE

NICKEL INCO ALLOYS

Monel* • "K"* Monel • "R"* Monel • "KR"* Monel • Nickel "D"* Nickel • "L"* Nickel Inconel* • Duranickel* Permanickel* • Inconel "X"*

Seamless extruded Monel tubing is now available in outside diameters up to 9¼", with wall thicknesses from ¼" to ⅝".

This means that you can make rustproof, corrosion-resistant slasher and other textile rolls easily and economically by machining the seamless tubing down to size. Monel* is readily machinable; will take and *keep* a smooth polish.

Monel is highly resistant to the destructive action of many dyehouse chemicals including all sizing compounds.

Cleaning is easy, too. Flushing with fresh water is usually all that is needed to keep Monel surfaces clean.

Whenever you need rolls . . . new or replacement . . . check with Inco. You may find that the newly available seamless extruded tubing will enable you to get *better* rolls at an economical cost.

For further information and quotations, write directly to Inco.

THE INTERNATIONAL NICKEL COMPANY, INC.

67 Wall Street, New York 5, N. Y.

*Reg. U. S. Pat. Off.

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
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Telephone: Murray Hill 3-8650

FACTORS

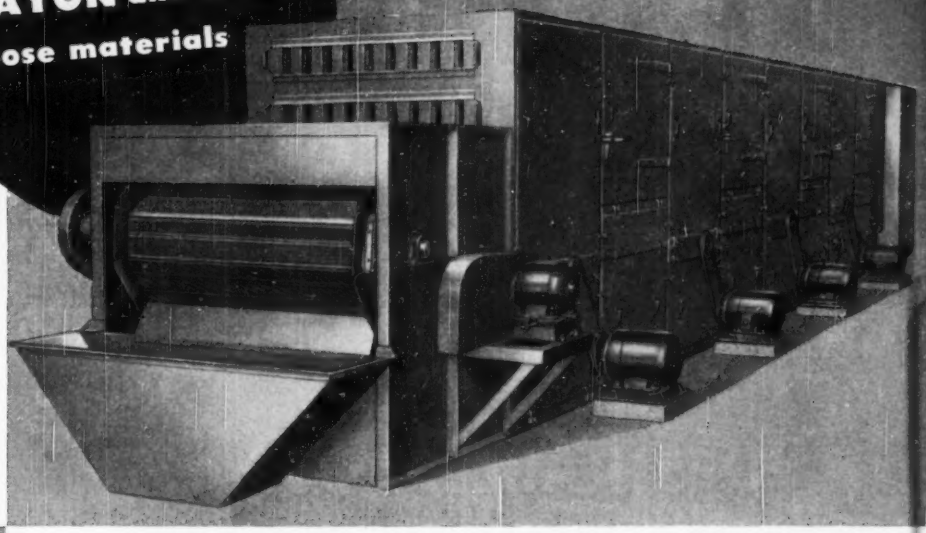
For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

for
WOOL, COTTON, RAYON and other loose materials



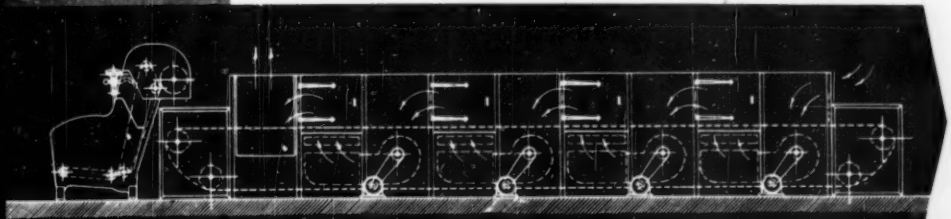
SARGENT'S *CONTRA-FLOW* Single Apron Dryer

Sargent presents a NEW, fast, automatic, single apron dryer employing the counter-air-flow heating principle. This system provides the most rapid and economical textile drying ever developed for wool, cotton, rayon and other synthetic and loose materials.

The material to be dried and the air which dries it *enter* the dryer at *opposite ends*, and *travel* through in *opposite directions*. The fresh air enters the dryer at room temperature at the delivery end. Passing upward then downward through the material, the air is constantly reheated and gains in temperature and moisture content as it travels toward the feed end. Wet material traveling through the dryer is subjected first to hot, wet air, then progressively to drier, cooler air. In the final stage, cool room temperature air passes through the hot, dry material and is thus delivered from the dryer in perfect condition and *without carrying away heat*. For complete information please write for Bulletin No. 183.

C. G. SARGENT'S SONS CORPORATION

Graniteville, Massachusetts, U. S. A.



Schematic diagram of the SARGENT CONTRA-FLOW SINGLE APRON DRYER showing direction of travel of air through fans and heating elements. Material travels in opposite direction.

KERANOL NK

gives **COTTONS AND RAYONS**

a very **DESIRABLE, SOFT, FULL HAND**

durable to **WASHING AND DRY-CLEANING**

Unaffected by pH variations in the finishing bath—compatible with Resins—very resistant to yellowing, even at excessively high temperatures. Write for our technical service bulletin #208-110.1

IT'S AN *Arkansas* PRODUCT!

CO., INC.

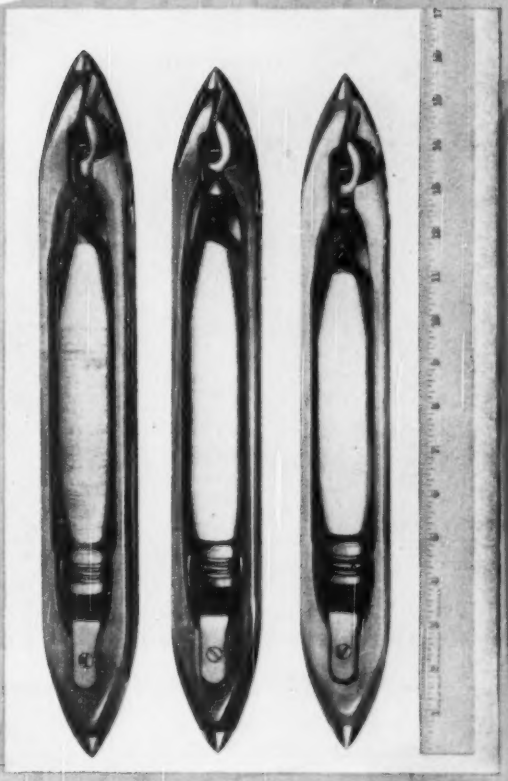
NEWARK, NEW JERSEY

LFP

TEMPERED
TRADE MARK REG.

THE SHUTTLE WITH GREATER CAPACITY

To date . . . LFP. . . has converted thousands of old bobbin changing looms to greater productive efficiency at lowest possible cost.



Same Bobbin Capacity as L.F.P., But ½" Longer

L.F.P. More Bobbin Capacity Than Old Style and Only ¼" Longer

Old Style With Less Bobbin Capacity

what it accomplishes . . .

Permits increasing bobbin capacity with practically the same size shuttle fitted to your present lay-end boxes.

advantages . . .

Eliminates costly replacement of lay-ends or new lays—No lengthy changeover time—No shifting of looms—No greater floor space required—No leasing out and rewarping—No loss of production.

Can be applied to any loom using yarn counts applicable to longer bobbins.

All the "down the line" savings effected by using fewer bobbins in spinning and weaving.

how this is accomplished . . .

By a shorter eye with same features as long eye—Compact high speed tip construction—Structural design of shuttle strengthened—Minimum increase in shuttle length.

Compare the LFP way to the old costly and lengthy changeover method . . . then standardize on LFP the Shuttles with greater capacity.

Thousands of old looms can still be changed over to the LFP principle—contact our Shuttle Experts.

Made in a modern—humidity controlled plant, exclusively devoted to the design, development and production of world-famous SOUTHERN SHUTTLES . . .
"THEY WEAVE THE WORLD'S NEEDS"

SOUTHERN SHUTTLES

PARIS PLANT . . . GREENVILLE, S. C.

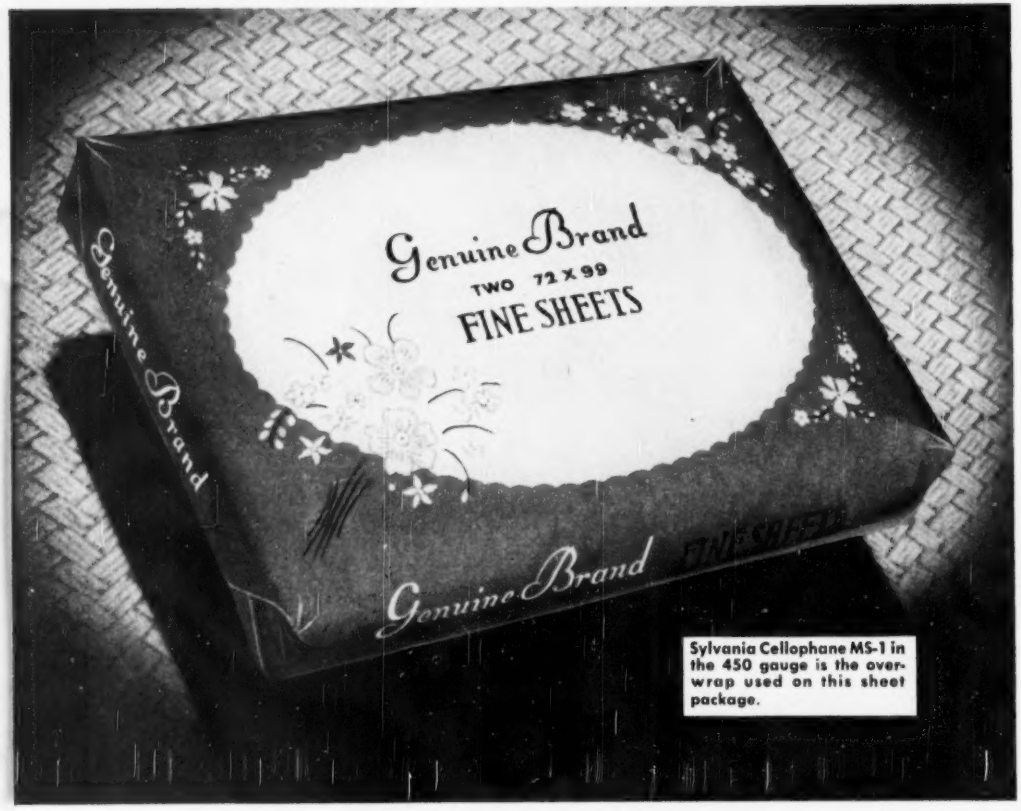
A Division of STEEL HEDDLE MFG. CO.

LARGER FILLING PACKAGE

2-K-3

SYLVANIA CELLOPHANE

The PLUS that means more sales!



Sylvania Cellophane MS-1 in the 450 gauge is the overwrap used on this sheet package.

Specific qualities engineered for your product tells why:

1 Sales Appeal **3** Durability
2 Transparency **4** Dust Protection
5 Low Cost

SYLVANIA CELLOPHANE ®

Mr. Cellophane is always available to help you solve your packaging problems. Talk over your requirements with your Sylvania representative or write us mentioning the specific application in which you are interested. Address Market Development, Dept. TI-5.

SYLVANIA DIVISION AMERICAN VISCOSE CORPORATION
Manufacturers of cellophane and other cellulose products since 1929
General Sales Office: 1617 Pennsylvania Blvd., Philadelphia 3, Pa.
Plant: Fredericksburg, Va.

Reduce Costs!
Increase Production!
Improve Products!

BARBER COLMAN

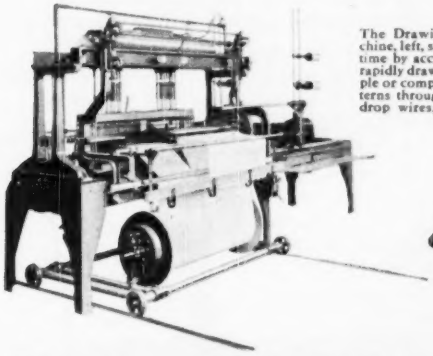
The Automatic Spooler, above, winds yarn from the spinning bobbins onto cheeses at 1200 yards per minute, and cleans out all gouts and slubs.

BARBER-COLMAN TEXTILE MACHINES

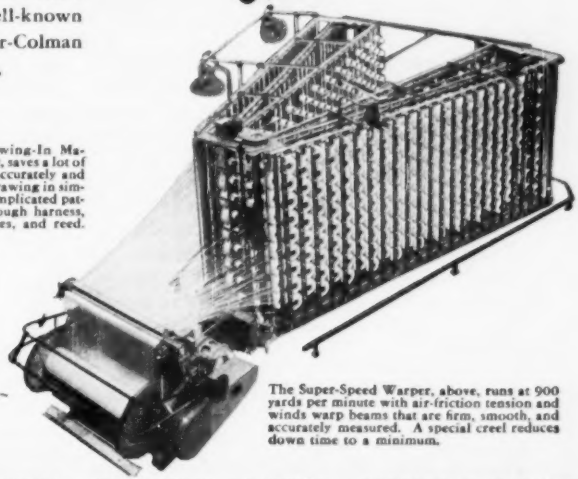
This equipment can reduce textile mill costs by reducing waste, by saving time and needless labor, and by improvements in the performance of following operations. Production can be increased because of the greater speed and efficiency of the machines, because losses are reduced by better yarn handling, and because of greater productivity for a given floor space. Mill products will be better goods as a result of maintenance of original yarn quality, cleaner yarn, and reduction of seconds.

Barber-Colman Textile Machines are important factors in the successful operation of hundreds of well-known mills, both large and small. Consult your Barber-Colman representative for potentialities of application.

The Portable Warp Tying Machine, left, ties in new warp directly at the loom, reducing down time, saving space, eliminating regaiting, and providing maximum versatility.



The Drawing-In Machine, left, saves a lot of time by accurately and rapidly drawing in simple or complicated patterns through harness, drop wires, and reed.



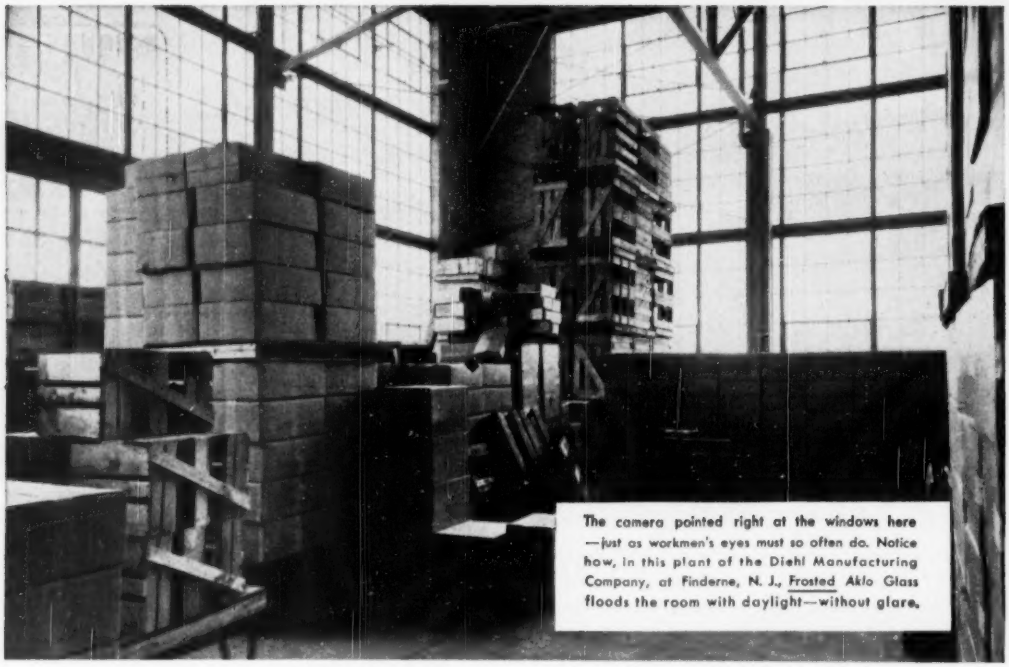
The Super-Speed Warper, above, runs at 900 yards per minute with air-friction tension and winds warp beams that are firm, smooth, and accurately measured. A special creel reduces down time to a minimum.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND MUNICH, GERMANY



The camera pointed right at the windows here—just as workmen's eyes must so often do. Notice how, in this plant of the Diehl Manufacturing Company, at Finderne, N. J., Frosted Aklo Glass floods the room with daylight—without glare.

How FILTERED DAYLIGHT improves working conditions

Windows can do more for you than just bring in daylight. They can *filter* that daylight to give you the most desirable portions of the sun's visible rays. Plants all over the country are using Blue Ridge Frosted *Aklo*® Glass for:

1. Better Seeing—This blue-green glass transmits that portion of the spectrum most restful to the eyes. Frosted *Aklo* Glass provides more uniformly diffused daylight, with subdued brightness. This means less eye fatigue, happier personnel, improved quality of work and reduced danger of accidents.

2. Greater Comfort—*Aklo* Glass absorbs a high majority of the heat-loaded infrared rays of the sun and reradiates much of this heat externally. Thus, interiors are cooler, workers are more comfortable.

3. Better Temperature Control—*Aklo's* reduction of sun heat permits more accurate control of indoor temperatures and humidities. It effectively reduces load on air-conditioning equipment.

Aklo is made by the Blue Ridge Glass Corporation of Kingsport, Tennessee, and sold by Libbey·Owens·Ford glass distributors. To see for yourself how Frosted *Aklo* Glass reduces glare and sun heat, ask your distributor for a Radiometer demonstration.

®

Free Book on Reduction of Sun Glare and Heat

Write to Blue Ridge Sales Division, Libbey · Owens · Ford Glass Company, 9455 Nicholas Building, Toledo 3, Ohio.

BLUE RIDGE GLASS CORP. QUALITY GLASS

BLUE RIDGE AKLO GLASS

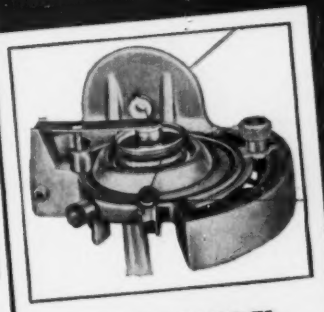
Heat Absorbing • Glare Reducing • Figured and Wire Glass

L O F

What are YOUR Tension Problems?

STANDARD MODEL

TWIN DISC MODEL



WARP MODEL

SEE Kidde

SPECIALISTS IN TEXTILE TENSIONS

Kidde Tension Compensators are precision devices that take the variables out of yarn tensioning. The Standard Model, which has proved the theory of tension compensators in many large plants, is designed for average speeds and tensions. The Twin Disc Model is especially useful for extreme speeds and tender yarns—passes knots at high speed. The Warp Model is small and inexpensive enough for warp beams—gives uniform beam tension, eliminates over-stressed yarns, prevents buckling of warp beam.

Whatever your tension problems, let Kidde help you find the answer.

Walter Kidde & Company, Inc., 590 Main Street, Belleville 9, N. J.
Walter Kidde & Company of Canada, Ltd., Montreal, P. Q.

Kidde

Kidde

Walter Kidde & Company, Inc.
590 Main Street, Belleville 9, N. J.

Gentlemen:
Send me information on Tension Control for your type of application.....

NAME.....

ADDRESS.....

CITY.....STATE.....

What 3 Years of

PNEUMAFIL*

have contributed to the Textile Industry

In the three short years since we started manufacturing Pneumafil equipment in our Charlotte plant, the Pneumafil System has become an essential to spinners for competing at a profit in a buyer's market. This was inevitable because of the outstanding ability of Pneumafil equipment to improve yarn quality, increase production, and lower spinning costs. Non-equipped spinning just cannot compete on an equal basis.

There are already 6,000,000 Pneumafil equipped spindles in operation here and abroad—more than enough to be indicative of the contributions of Pneumafil to spinning under widely varying conditions and practices. Here are some of these contributions:

Better Yarn Quality

Fewer slubs and gouts to cause trouble and weaving seconds
Elimination of spinning doublings
20 to 35% fewer ends down and fewer end piecings

Greater Production

Increased frame speeds—up to 18%
Fewer work stoppages in spinning, winding, and weaving
End piecings are easier to make
More yarn per frame

Reduced Spinning Costs

Spinners can tend more sides with less work than formerly
Less spinning waste
Waste is salvaged open and ready for reuse without reprocessing in waste machines
Waste salvage alone has paid for some Pneumafil installations
Cleaning labor is greatly reduced

See Pneumafil Equipment at the American Textile Machinery Exhibition, Atlantic City.

Sooner or later every spinning frame will have to be equipped with Pneumafil in order to meet competition. Investigate its many advantages now. It is the best investment you can make.

South America and Continental Europe:
Luwa, S. A., Zurich, Switzerland

Canada:
Ian M. Haldane & Co.
P. O. Box 54,
London, Canada

Mexico:
Tecnotex, S. A.
Avenida Del Trabajo 268
(Colonia Morelos) Mexico, D. F.

*Registered Trade Mark

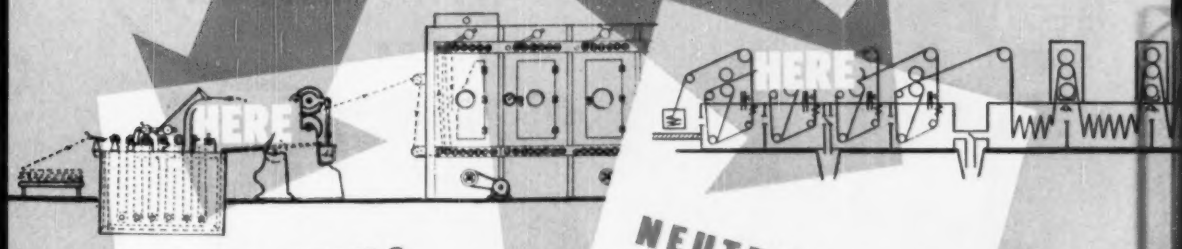
Pneumafil Corporation • Charlotte • Boston

Nacconol NR

AMERICA'S LEADING SYNTHETIC DETERGENT

CUTS CARBONIZING COSTS

(On Raw Stock or Piece-Goods)



STEEPING

1 to 2 lb. Nacconol NR per 100 gals. of carbonizing acid speeds penetration of the vegetable matter by acid . . . gives more complete dusting.

NEUTRALIZING

½ to 1 lb. Nacconol NR per 100 gals. of alkali solution speeds up penetration of alkali for faster, complete neutralization.

Many detergents claim to be "just like Nacconol".

But only NACCONOL NR brings you the best combination of wetting, washing, emulsifying, dispersing and foaming . . . in hot or cold solutions over a wide pH range.

For low cost results, buy the *balanced* detergent . . . buy NACCONOL NR.

NATIONAL ANILINE DIVISION ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N. Y. (BOwling Green 9-2240)

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Providence, R. I., 15 Westminster St.	Dexter 3068	Atlanta 2, Ga., 140 Peachtree St.	Cypress 2821
Chicago 54, Ill., Merchandise Mart Bldg.	SUperior 7-3387	Chattanooga 2, Tenn., James Building	Chattanooga 6-6347
Philadelphia 6, Pa., 200-204 S. Front St.	LOmbard 3-6382	New Orleans, La., Cotton Exchange Bldg.	Raymond 7228
San Francisco, Cal., 517 Howard St.	Sutter 7507	Portland 9, Ore., 730 West Burnside Ave.	Beacon 1853
Charlotte 1, N. C., 201-203 West First St.	Charlotte 3-9221	Toronto, Canada, 137-145 Wellington St. W.	Elgin 6495

*Reg. U. S. Pat. Off.

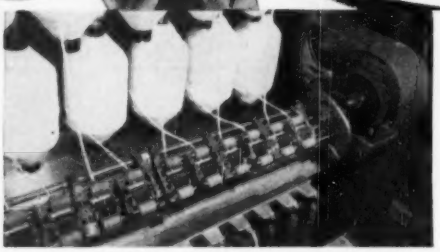
An Invitation to GREATER PROFITS!

See This New Modern

H & B TEXTILE MACHINERY

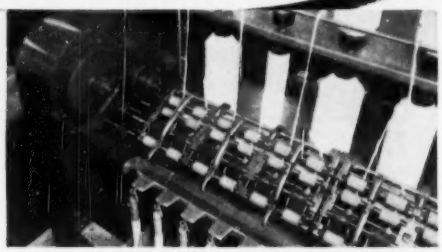
at Booths 144 to 158

The American Textile Machinery Exhibition



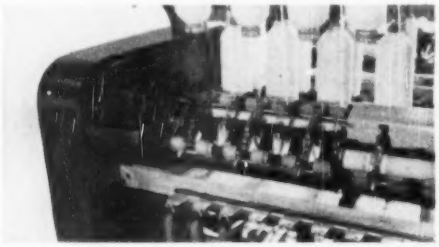
NO. 1 — H & B CASABLANCAS SUPER HIGH-DRAFT SYSTEM

A 3-roll system with a set of double aprons. Features newly designed cap bars, weighting of roller stands, cradles and tensors. Adjustable roll settings and a better control of apron travel produce yarn of high quality in evenness and strength. Warp yarns from a single roving in the creel are possible. Highly flexible drafting range from 24" — 50". Handles staple fiber lengths up to 2".



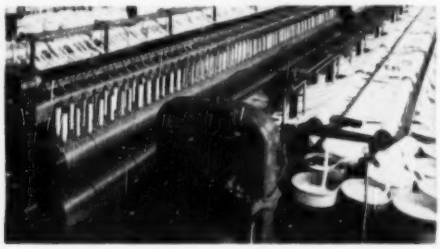
NO. 2 — H & B CASABLANCAS FOUR-ROLL HIGH-DRAFT SYSTEM

Designed for finer count yarns, yet can also handle lower counts. 4-roller arrangement with double apron between the first two lines and with condenser directly in back of double apron permits 3 distinct drafting zones for drafts as high as 80" with certain fiber lengths. Equipped with extra flexible saddles and spring weighting of a new design.



NO. 3 — H & B CASABLANCAS 3-3 HIGH-DRAFT SYSTEM

For synthetics and blends or any fiber from 1" to 3". Three — roll system with double apron between first two lines. Features spring weighting, new type saddle and a cradle design with interchangeable platforms. Changeover from spinning one staple length to another made in a few minutes, without changing cradles, belts or roll settings. Drafting range 14" — 40" with complete fiber control.



NO. 4 H & B FIVE-ROLL 10x5 HIGH-DRAFT SLUBBER

In full operation this machine will demonstrate how high draft in the Card Room cuts cost by eliminating from one to three operations.

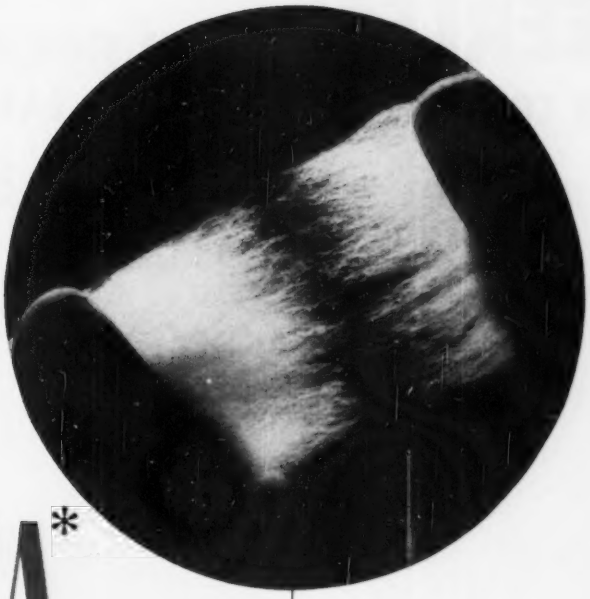
Booths 144-158 INCLUSIVE at extreme end of main auditorium to left of stage. *Representatives available during off-hours at the Breakers Hotel.*

H&B AMERICAN MACHINE CO.

Builders of Modern Textile Machinery

FACTORY, EXECUTIVE OFFICES AND EXPORT DIVISION • PAWTUCKET, R. I., U.S.A.

BRANCH OFFICES: Atlanta, Ga. — 815 Citizens and Southern National Bank Bldg.; Charlotte, N. C. — 1301 Johnston Bldg.



TECA* fiber offers

- *high wrinkle resistance*
- *ability to hold its press*
- *high soil resistance*
- *high shrinkage resistance*
- *fast drying*

THESE *five* selling points, *plus* the nationally recognized TECA trade-mark, are all sound reasons why your customers should prefer the new woven-with-TECA fabrics now available in men's and women's summer apparel.

A high percentage of TECA fiber in your fabric or garment is a proven sales aid. Specify it. Advertise it.

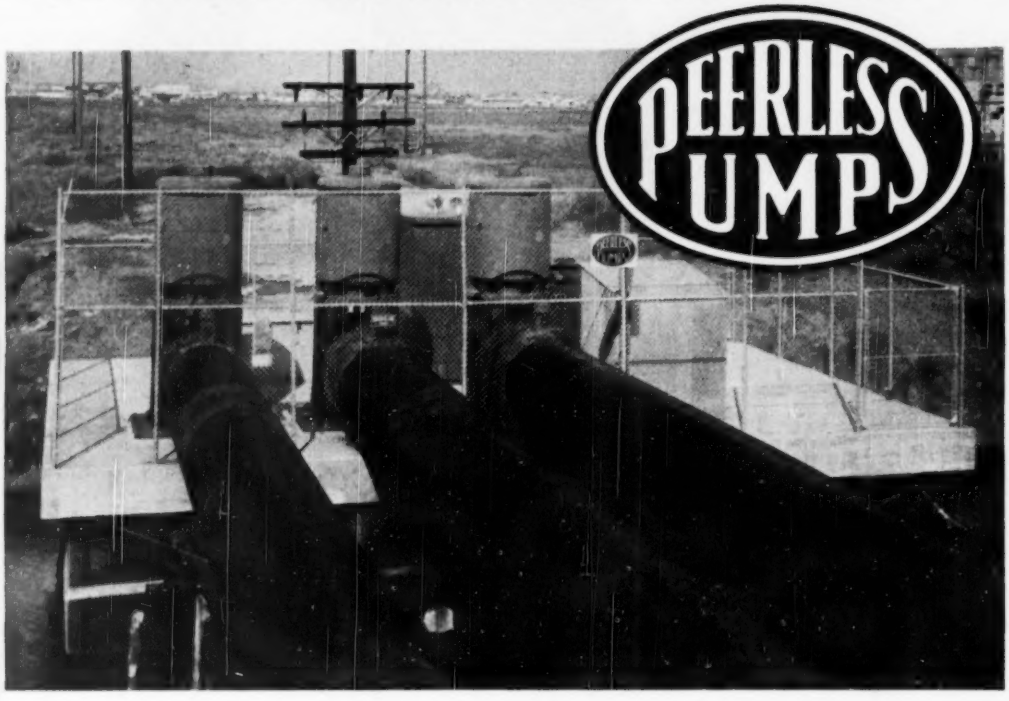
*TECA is an Eastman trade-mark. It identifies a short crimped fiber made by Eastman from cellulose acetate—a fiber otherwise known as estron or acetate rayon staple.

Tennessee Eastman Corporation

(SUBSIDIARY OF EASTMAN KODAK COMPANY)

KINGSPORT, TENNESSEE

PEERLESS IN THE WORLD OF MOVING AND CONTROLLING WATER IN LARGE VOLUMES



PEERLESS HYDRO-FOIL PUMPS

OFFER CAPACITIES RANGING UP TO 220,000 G.P.M. AGAINST LOW AND MEDIUM HEADS FROM 2 TO 60 FEET

MIXED FLOW AND PROPELLER TYPES—The best way to move large quantities of water against low or moderate heads is to use Peerless Hydro-Foil Pumps. They're available in two types: propeller type and mixed flow type. Advanced principles of hydro-dynamics applied to the design of these versatile pumps insures lower overall maintenance outlay and reduced pumping costs, in all applications.

SINGLE AND MULTI-STAGE MIXED FLOW PUMPS—Peerless mixed flow pumps are made in single or multi-stage units to give flexibility in the selection of each pumping unit. These pumps complement the propeller type and embody advantageous characteristics of both axial-flow and centrifugal pumps. Designed for sump applications with minimum submergence, maximum heads, minimum installation space. Also available in close-coupled types.

ALL TYPES OF DRIVES—Any type of drive may be used with Peerless Hydro-Foil Pumps. These include: electric motor, right angle gear drive, V-belt and flat belt or a combination of drives, if required.

REQUEST 24-PAGE BULLETIN—For complete design, construction and application data including suggested station arrangements of these Peerless Hydro-Foil Pumps for economical, large-volume water pumping, request Bulletin B-148-1 now.

A FEW OF THE SERVICES AND APPLICATIONS OF THESE MULTI-PURPOSE PUMPS

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- FLOOD CONTROL
- CANAL DIVERSION
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- INDUSTRIAL AND PROCESSING APPLICATIONS
- CONDENSER COOLING
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PEERLESS PUMPS fmc

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
Factories: Los Angeles, California, and Indianapolis, Indiana
Offices: New York, Atlanta, Fresno, Los Angeles, Chicago, St. Louis, Phoenix; Dallas, Plainview and Lubbock, Texas.

IT'S A MATTER OF FACT:..

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IS A BIG CONTRIBUTOR

The smartest fabric designers in the men's rayon suiting business are using more and more Celanese* staple fiber of acetate rayon...

- For a crisp, springy hand
- For wrinkle-resistance
- For dimensional stability
- For high style effects achieved with cross-dyeing

If your fabrics could use more of these sales-making characteristics—check your constructions for Celanese acetate staple content—a staple with scientifically produced and controlled crimp.

Celanese Corporation of America
180 Madison Avenue, New York 16.

Available in Canada from
Canadian Cellulose Products, Limited, Montreal

Celanese* staple fiber of acetate rayon

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no short cut

In the production of industrial lubricants, as of textiles, there is no short cut to *quality*. It is achieved by long research, improving each product to fit changing needs, constant laboratory control to assure uniformity, rigid adherence to proven formulae. ...After sixty-three years use, textile engineers have found that they can always rely on the *quality* and *uniformity* of Standard Oil Lubricants. It is this dependable quality that keeps Standard Oil Lubricants first in popularity in the textile industry throughout the South. Our lubrication engineers have experienced understanding of specialized textile lubrication needs. Why not avail yourself of this experience?

STANDARD OIL COMPANY (KENTUCKY)

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You buy *more* than the product when you buy Staley Starches. You also obtain without obligation, the service of skilled technicians who are always at your beck and call . . . ready to help solve every special problem or improve present operations. Working with Staley's *complete* line of modified and unmodified corn starches, we can guarantee uniform sizing, better weavability, and improved finishing. Ideal starches for every use . . . the knowledge of how and when to use them . . . scientific controls that insure identical results every time! That's what Staley's 30 years of working hand in hand with the textile industry means to you—write for facts today!

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For Sizing—Spun Rayon

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Gentlemen:

Please send me without cost or obligation complete information about your top-quality textile starches and technical service.

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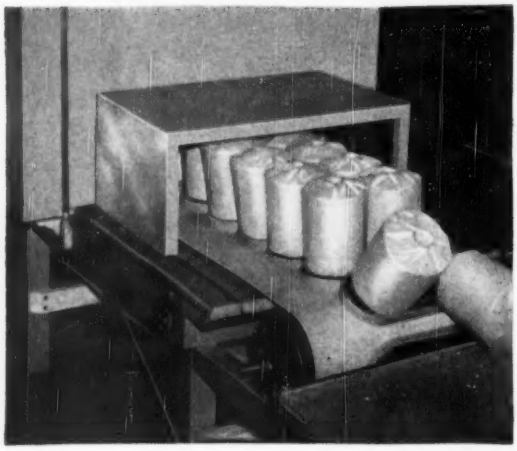


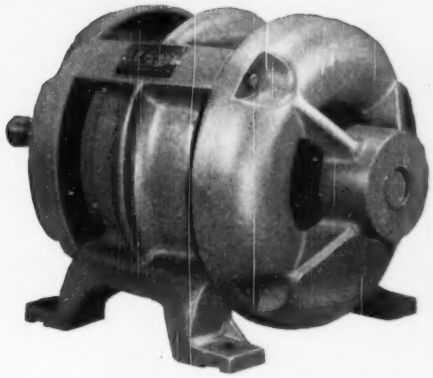
Faster Cake Drying and Twist Setting

Cutting cake drying and twist setting time in rayon mills is only one of the many advantages of Allis-Chalmers Dielectric Heaters. Because each strand is heated from the inside, heating and drying are uniform throughout the package. Quality is greatly improved. Large ovens and drying rooms are eliminated. You can increase capacity in the same floor space. Stock in process is reduced. Engineering and cost studies made without obligation. Ask your nearest Allis-Chalmers Sales Office or write the factory.

ALLIS-CHALMERS, 1054A SO. 70 ST.
MILWAUKEE, WIS.

Quick-Clean, Texrope and *Vari-Pitch* are Allis-Chalmers trademarks.

LINT BLOWS RIGHT THROUGH



Quick-Clean motor cuts maintenance 3 ways

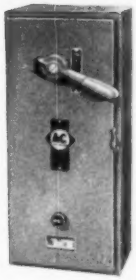
1 FREQUENT CLEANING NOT NEEDED. Wide open design allows two ventilating fans to pull air into the *Quick-Clean* motor and push it right out again carrying all lint and dirt with it. All surfaces are smooth and hard; no crevices in which dirt can collect.

2 ALIGNMENT IS RIGIDLY MAINTAINED by cast iron frame which provides strong support for motor parts without interfering with air flow. Bearings are held in alignment throughout motor life.

3 BEARINGS ARE SEALED which eliminates usual expensive bearing maintenance procedures. Cannot be over or under lubricated. Will not throw grease or oil which would collect dirt or soil product. Lint or dirt cannot enter bearing.

Get more information on the *Quick-Clean* textile motor and what it can mean in low maintenance costs in your mill. Ask your nearest Allis-Chalmers Sales Office.

MATCH QUICK-CLEAN MOTORS WITH A-C STARTERS



This control was developed especially for dependable, safe starting of Quick-Clean motors. Other Allis-Chalmers control will give you dependable operation of all electrical equipment in your plant. Competent application engineers are always available at your nearby Allis-Chalmers Sales Office.

Send for Free Engineering Literature

Allis-Chalmers Loom Motors	51B7111	Power Generating Equipment, Transformers, Circuit Breakers, Power Distribution Equipment	25B6150
Texrope Drives	20B6051		
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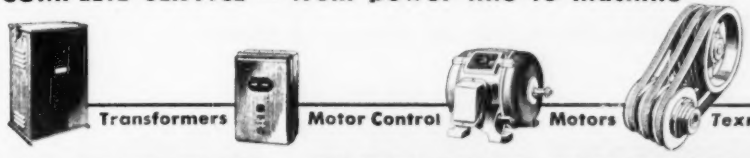
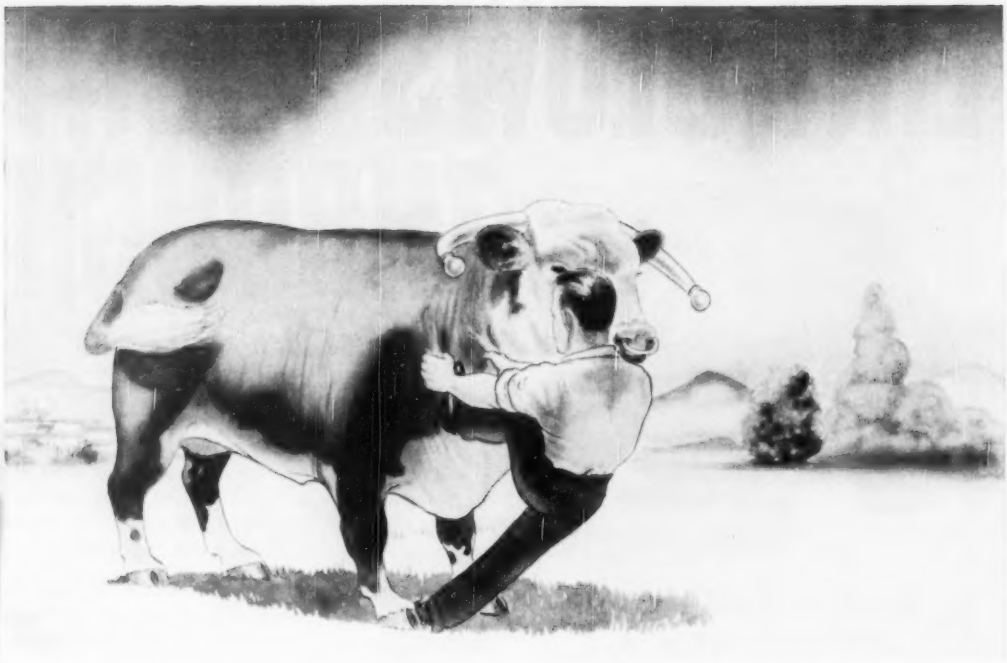
COMPLETE SERVICE — from power line to machine



ALLIS-CHALMERS

Originator of the Multiple V-Belt Drive for the Textile Industry

A-3060



THERE'S MORE THAN *One* WAY TO SKIN A STEER . . .

. . . tan a hide . . . cut strips . . . and manufacture flat leather belting.
And the quality of belting varies with each different way. The result? Buyer Confusion!
It's difficult to know which belt to buy, which manufacturer
is producing the belting that will do the job best.

THE "SOUTHERN" WAY—Actually, there's only one ***right*** way to produce flat leather belting. It's the new, modern method we at Southern Belting have developed in our laboratories and plant over a period of 60 years. We have combined the indispensable know-how of our highly skilled craftsmen with the very latest manufacturing techniques, and the result is the finest leather belting that can be used in modern power transmission systems.

LET OUR SALES STAFF SHOW YOU WHY THE "SOUTHERN" WAY IS BEST!

Buy **"SOUTHERN"** *Belting with complete confidence.*

SOUTHERN *Belting* **COMPANY**

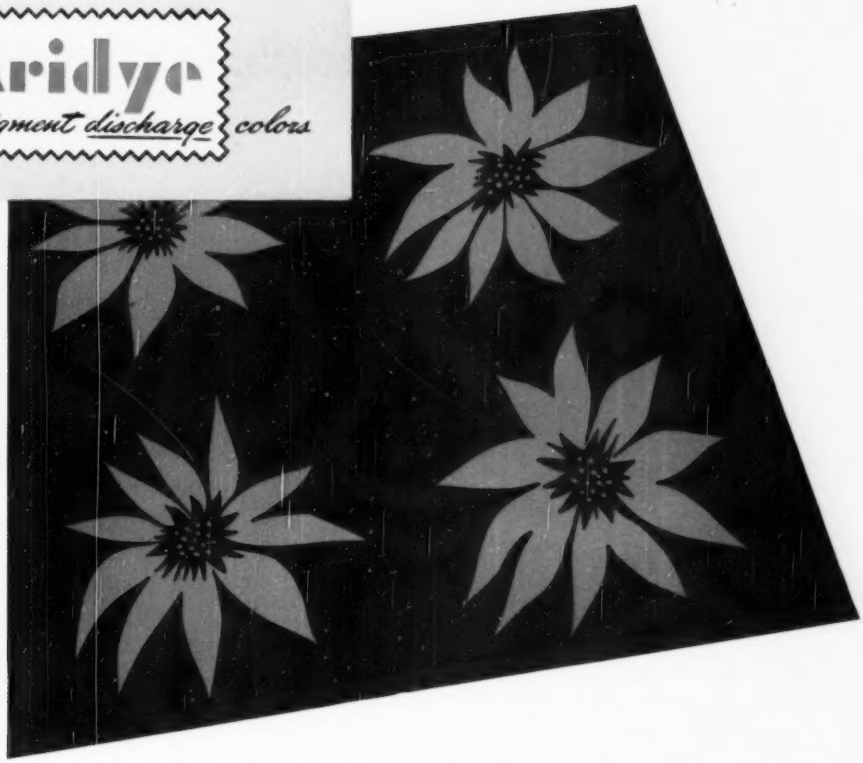
Quality is an old "SOUTHERN" Custom

236 FORSYTH STREET, S. W. ATLANTA 2, GEORGIA

NEW! BRILLIANT! FAST!

Aridye

Pigment discharge colors



Yes... Interchemical now introduces an exclusive new line of *Pigment Discharge Colors* that give you all the well-known brilliance of "silk" colors, *plus* all-round fastness!

With these new discharge colors you can produce bright blues, royals, yellows, greens, aquas, pinks, many other shades... *all with eye-appeal and buy-appeal*... on rayon, spun rayon, and other fabrics.

Aridye Discharge Color prints are fast to washing, drycleaning, perspiration, and light. They give fine, sharp marks... smooth, opaque prints ... with no impairment of the hand. Colors now available include two blues, a green, a yellow, and a red. Others under development.

These new colors are applied as pigmented water-in-oil emulsions by the usual discharge printing method. They may be used to produce both self shades and combination shades and can be printed with vat dyes and pigment whites to obtain unusual, striking color combinations.

This is another example of the many research-born developments of Interchemical's Textile Colors Division—all dedicated to the solution of *your* color problems. For further details on Aridye Pigment Discharge Colors, mail the coupon today.

Aridye Interchem® Dyes

Pigment colors

INTERCHEMICAL CORPORATION
TEXTILE COLORS DIVISION
Fair Lawn, N. J.

QUALITY • UNIFORMITY • SERVICE

Interchemical Corporation
Textile Colors Division
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Please send complete information on your new line of Aridye Discharge Colors.

Name_____

Title_____

Company_____

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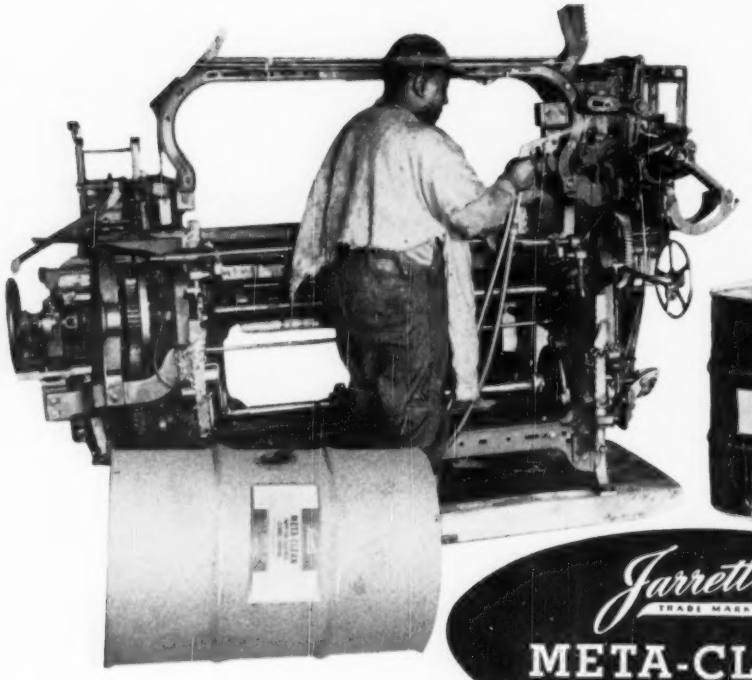

Jarrett's TRADE MARK
META-CLEAN

SLASH EQUIPMENT CLEANING COSTS!

➔ *JARRETT'S META-CLEAN EFFECTIVE AFTER DILUTING TWENTY TIMES*

META-CLEAN is the DIFFERENT solution that cleans dirty, rusty machinery and equipment in a matter of minutes. No tiresome cleaning involved . . . just spray it on, wipe it off. Easy as that! All grease, dirt and oil is removed without the slightest harm to skin or equipment. No new equipment, no change in present cleaning methods is necessary with META-CLEAN.

- **ECONOMICAL:** Requires no solvent. One part Meta-Clean to 10 to 20 parts water does a *thorough* job.
- **NON-INFLAMMABLE:** No fire hazard or danger involved.
- **ODORLESS:** Doesn't create noxious fumes.
- Can be used effectively in any part of your mill . . . on any machine.

Ask for Meta-Clean . . . another Jarrett Product that proves "Satisfaction given — not promised."

CONTACT CECIL H. JARRETT COMPANY, INC., OR ANY REPRESENTATIVE LISTED BELOW FOR ACTUAL DEMONSTRATION THAT META-CLEAN IS THE **PERFECT SOLUTION** *FOR CLEANING ALL TEXTILE EQUIPMENT ECONOMICALLY.*

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- *light weight*
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- *no red rust*
- *eliminates painting*
- *high strength*
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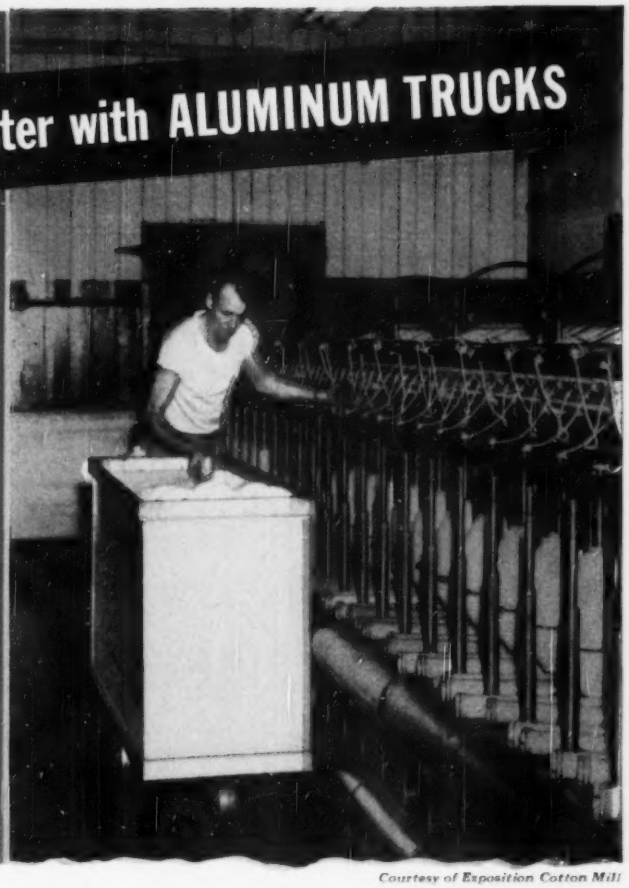

Courtesy of Exposition Cotton Mill

Your workers can push trucks of Alcoa Aluminum with their knees. Both hands are free to doff full bobbins and replace empty ones. Your production increases. Workers like the effortless way they handle. Where corrosive atmospheres rust steel, aluminum doesn't even require painting. These long-lasting trucks never rust-streak yarns. Never raise splinters to tear fabrics or injure workers' hands. You'd expect to pay much more for trucks of Alcoa Aluminum. But the cost is right in line with wood and steel trucks. Exposition Cotton Mill is a typical organization that is including aluminum handling trucks in their modernization plans.

Like to know who makes trucks of Alcoa Aluminum? Mail the attached coupon to: ALUMINUM COMPANY OF AMERICA, 1990E Gulf Building, Pittsburgh 19, Pennsylvania.

Visit us on the stage—Booths 1, 2 and 3—American Textile Machinery Exposition, Atlantic City, N. J.

ALCOA
FIRST IN
ALUMINUM

Gentlemen:
Please send a list of manufacturers who are making textile trucks of Alcoa Aluminum.

Name _____
Title _____
Company _____
Address _____

TEXTILE BANKING COMPANY

Inc.

Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
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serves industry

. . . with unequalled distributing facilities

1. Three producing plants—in Michigan, Texas and California.
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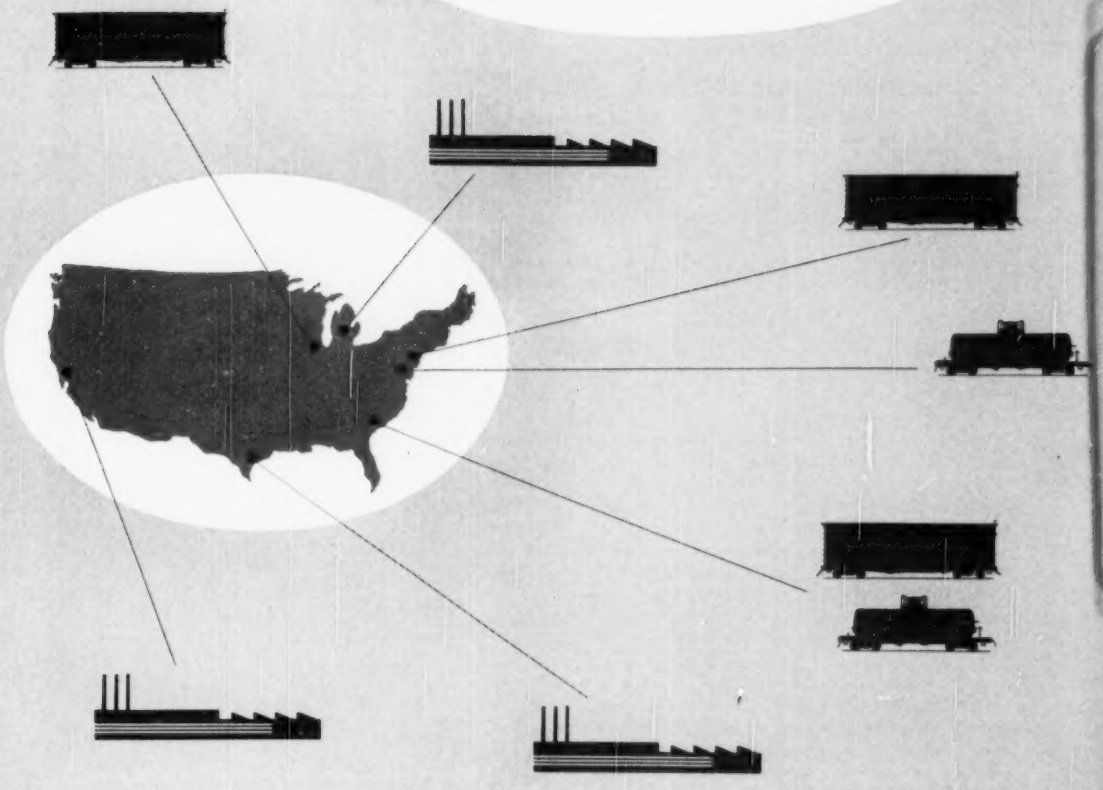
3. Caustic Soda Solid, Flake and Ground Flake terminal distributing facilities—Chicago, Ill., Charleston, S. C., and Port Newark, N. J.



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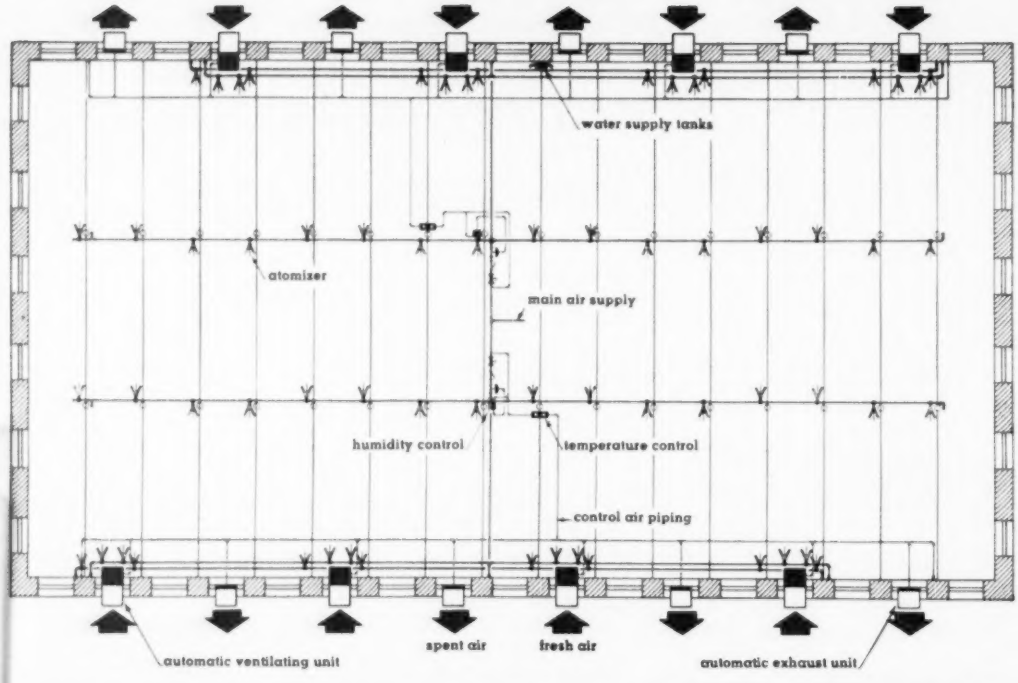
CHEMICALS
INDISPENSABLE TO INDUSTRY
AND AGRICULTURE



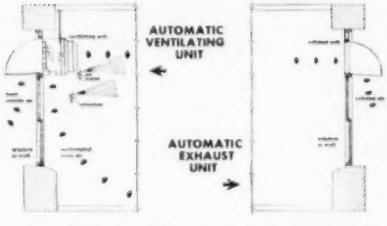
DUCTLESS HUMIDIFICATION AND COOLING

. . how it works, what it does

You know the advantages of Amco humidification . . . correct regain, even yarn counts, increased output, improved quality, reduced waste and fire hazard. Atomizers are self-cleaning. Controls are extremely responsive.

But do you know how easily you can add COOLING to humidification, with a ductless system? You discard nothing and make only a modest addition to your present humidification system. Add evaporative cooling room by room as you need it. Modify it any time you want.

The cooling effect of evaporating twelve pounds of water equals one ton of refrigeration. That's the measured result of evaporative cooling in one hour in a given area. For example, in cotton weaving at 80% relative humidity an Amco *ductless* evaporative cooling system can economically produce an indoor temperature approximately 7 degrees above the outside wet bulb temperature.



Ventilating units draw in a controlled amount of fresh air, additional atomizers provide extra evaporation for absorbing excess heat. Controlled vents exhaust spent air and heat. Automatic temperature controls have sufficient range to cover winter and summer conditions. Write for new Amco Catalog 2.

Amco offers both ductless and duct systems of humidification and cooling. An Amco engineer will give you unbiased advice on the system best suited to your requirements.

AMCO

HUMIDIFICATION AND COOLING

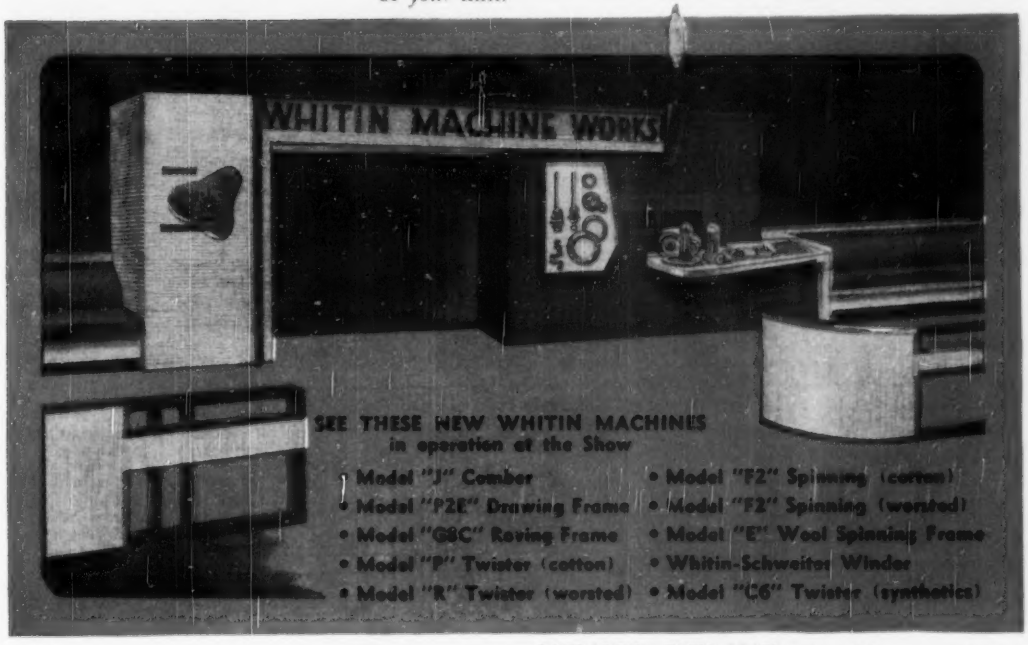
AMERICAN MOISTENING CO., AFFILIATED WITH GRINNELL COMPANY, INC., PROVIDENCE, R. I. • BOSTON • ATLANTA • CHARLOTTE

Doorway to the Mill of Tomorrow

WHEN you pass through the doorway of the Whitin Booth at The American Textile Machinery Exhibition*, you'll see, in operation, preparatory machinery designed to speed production, improve quality and cut costs in the textile mills of tomorrow.

Whitin research men and engineers have, over a period of years, combined their efforts to develop and perfect these machines . . . to make them more efficient and more versatile in handling the entire range of natural and synthetic fibers.

We cordially invite you and the members of your production staff to visit our exhibit . . . to see for yourselves what *we* have accomplished in the development of new machinery to make possible the more profitable operation of *your* mill.


WHITIN MACHINE WORKS
SEE THESE NEW WHITIN MACHINES
in operation at the Show
• Model "J" Comber
• Model "P2E" Drawing Frame
• Model "G8C" Roving Frame
• Model "P" Twister (cotton)
• Model "R" Twister (worsted)
• Model "F2" Spinning (cotton)
• Model "F2" Spinning (worsted)
• Model "E" Wool Spinning Frame
• Whitin-Schweitzer Winder
• Model "CG" Twister (synthetics)

*ATLANTIC CITY, MAY 8-12, 1950
Sponsored by
National Association of Textile Machinery Manufacturers

Whitin MACHINE WORKS

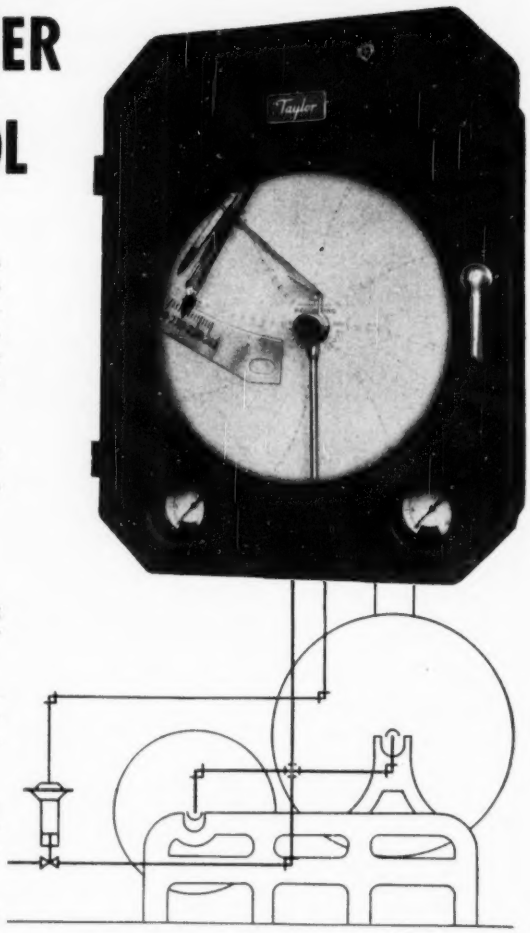
WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

CUT COSTS 5 WAYS

with Taylor's simple, dependable

AUTOMATIC SLASHER CYLINDER CONTROL



TAYLOR Automatic Slasher Cylinder Control is engineered to do two big things—keep your costs down and your product quality up. This simple, low-cost Taylor Control does this by automatically maintaining constant, uniform temperature across your slasher cylinders. It cuts costs five ways by giving you:

1. ***Proper setting of the size on the warp***
2. ***Correct laying and binding in of the warp fibres***
3. ***Retention of the proper moisture in the warp***
4. ***Decreased shedding of dried size***
5. ***Assurance of no steam consumption over actual requirements***

All this adds up to stronger, more elastic warps insuring you less breakage, fewer loom stoppages and higher production at lower cost.

Boss of the job is a dual instrument, the Taylor Double-Duty Fulscope* Temperature and Pressure Controller (illustrated), which controls both temperature of the condensate and pressure in the slasher cylinders.

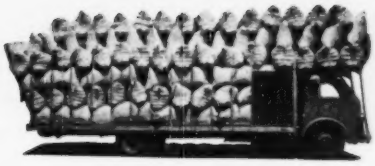
When switching from one weight yarn to another only one control point adjustment is needed. Temperature and pressure control points of the instruments are so connected that the proper differential always exists.

This is the final step toward completely automatic control of your entire slashing operation, including *size cooking control, storage kettle control* and *size box control.* For full details ask your Taylor Field Engineer or write for **Bulletin 98180.** Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

AUSPICES OF AMERICAN TEXTILE MACHINERY EXHIBITION ATLANTIC CITY MAY 8-12, 1950 TEXTILE MACHINERY MANUFACTURERS ASSOCIATION

*Registered Trade-Mark

Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY



Are you getting the most from the wool you buy?

With Syton, many mills spin closer to the limit spin and get the *most* from the wool they buy. More important than ever now, when wool prices are sky high. Syton increases yarn strength from 10% to 30% and gives you these advantages:

FINER COUNTS:

Limit spin may be more closely approached with Syton treated yarns.

EASIER CARDING:

Better parallelization of the fibers. Cards may be speeded, often with reduced fly and waste.

STRONGER ROPINGS:

Ropings are rounder and are better condensed.

FASTER SPINNING:

Syton controls fiber slippage, permits faster machine speed. Increased tensile strength permits twist to be reduced.

IMPROVED DRESSING; WEAVING, FINISHING:

Greater yarn strength helps warp dressing and increases weaving efficiency.

Syton is a silica dispersion applied in an emulsion at the picker or gill box. It reduces slippage, and results in better and more uniform draft control. For more information, please get in touch with Monsanto's Textile Chemical Department by using the handy coupon.

STYMER sizes a billion yards of acetate

How mills save time, trouble and expense

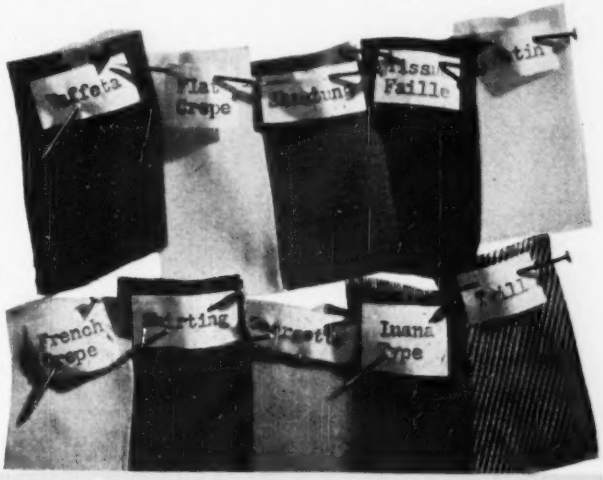
More than a billion yards of acetate, in almost all principal constructions, has been woven from warps sized with Stymer, Monsanto's synthetic size. Success in the mills is another reason why the list of Stymer users is growing steadily.

MILL MANAGERS get savings because Stymer reduces operating time. Mill men generally realize a number of advantages from mixing the size to finishing the fabric.

ADVANTAGES IN SIZING: Smooth warps; no static build-up; warp splits easily at "bust bars;" minimum build-up on cans; low dry can temperatures are possible; no can covers are necessary; large mixes of the size can be stored for long periods; does not gel when cold and will not clog pipes or valves; no scum in size box, spin finishes emulsified; there is no throwaway.

ADVANTAGES IN WEAVING: Good separation at drop wires, weaver knots come clean, no static problems, heddles stay cleaner longer, no accumulation on reeds, less shedding, efficient production of first quality cloth.

Syton, Stymer: Reg. U. S. Pat. Off.



MONSANTO
CHEMICALS — PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

Write today for Textile Chemical information

MONSANTO CHEMICAL COMPANY, Textile Chemicals Dept.
Everett Station, Boston 49, Mass., Desk TIT 23

Please send me information on:

Stymer Syton

My enclosed letter requests information on chemicals for my mill.

Name Title

Company

Address

City Zone State

ABSOLUTELY UNIFORM... from Beginning to End

Have you ever thought of the problem of making a piece of card clothing that is absolutely uniform from beginning to end? To do this, literally *millions* of pieces of card wire must be cut, formed and inserted in the foundation with unvarying accuracy.

Formerly, the difficulty was that machine parts would wear, and unless these parts were frequently changed there would be some variation of shape. But the patented Tufferizing Process ended all that. Now you can get an absolutely uniform product from the beginning to the end of every fillet. For proof, specify TUFFER when you order.

HOWARD BROS. MFG. CO. WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga. and Gastonia, N. C.

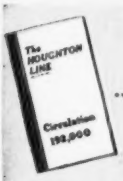
Branches: Philadelphia, Pa. and Blanco, Texas *Direct Representation in Canada* A-1

TUFFER CARD CLOTHING ***IMPROVES PRODUCTION ALL ALONG THE LINE***

The HOUGHTON LINE NEWS

Published by E. F. Houghton & Co., pioneers in heat treating and metal processing products since 1865

VOL. 18, NO. 3 — MAY, 1950



...the "near editor's" viewpoint...

Retirement of men at age 65 proved to be a controversial subject, many declaring it is a real social waste. One reason brought forward for today's longer span of life is that we have to live longer to earn enough to pay our taxes.

Since the pendulum swung back from state socialism to free enterprise in Australia, most Conservatives expect to see business improve almost overnight. But the dollar shortage cannot be overcome that rapidly, and that is the fundamental economic problem "down under."

And from Australia comes the item about an old grandfather who was given a new boomerang and spent the rest of his life trying to throw the old one away.

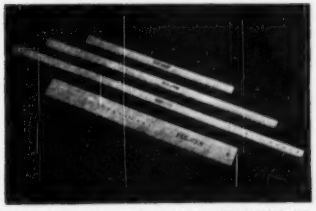
CHAIRMAN OF THE BOARD

Resin Finishes Beat Starch

Here's a series of thermo-plastic resins that have real possibilities for semi-permanent finishing of textiles. They'll stand more washing than will starch-finished fabrics. The range of finishes runs from a soft handle to a stiff, "starchy" feel, depending on which *Resonet* you use. We'll be glad to demonstrate on your fabrics if you'll send samples to our Laboratory and tell us what type of finish you want.

Wool Oils That Reduce Static

One of the problems in processing wool is that of static electricity generated by the operation. A wool oil that will properly lubricate the stock and help cut down static is always welcome. Houghton has several grades in its *Sulfol* and *Lanolubric* product groups, one of the newer ones being noted for this non-static characteristic. If your interest lies in wool we suggest you look into these modern, self-emulsifying stock lubricants.



Ask about advantages of new VIX-SYN fabricated synthetic rubber strapping — a supplement to the VIM line of mechanical leathers.

The Three R's of Surface Active Agents

You who buy detergents or wetting agents for wet processing may not all be chemists. Perhaps your experience was more along mechanical lines, but if wet processing is one of your responsibilities, you suddenly found, in this chemical age, that you had to learn the theory and practice of surface active agents.

In practice it's not too difficult. You need not concern yourself with molecular chain reactions. What are more important to you may be termed the three "R"s — not the ones you learned in school, but rather *'rithmetic, reasons* and *results.*

The 'rithmetic in choosing a surface active agent for most efficient wetting out comes down to this simple question:

$$\text{Does B} + \frac{\text{B}}{2} = \text{A?}$$

In other words, if surface active agent "A" costs 50% more than agent "B", but you only need use half as much, which is the better value? The answer is, "A"! The lower first cost doesn't fool the smart buyer. Let's take an example:

Suppose "B" costs 30 cents a pound; "A" at 50% more would be 45 cents. But, you use half as much "A" to get a wetting speed identical to that of the "B" material. So a half-pound of "A" at 22½ cents will do the same job as well and as quickly as a pound of "B" at 30 cents — a clear saving of 7½ cents a pound.

Therefore you have to know the efficiency of a product before you can judge its money value.

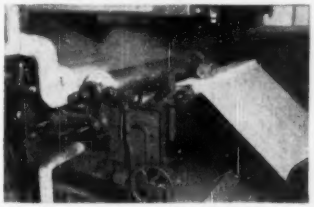
"Reasons", the second of the three Rs, may be summed up in one word: *Concentration* of the wetting agent. If it is *all* active material, not diluted to lower the first cost, less will be required.

"Results" will depend on your particular problem, whether it's wetting, rewetting, dye bath leveling, package dyeing and the degree of neutrality of the solution. If the wetting agent you use speeds up your production and costs you less because you use less, then you have a good money value.

That's common sense, isn't it? And that's the basis on which we offer Houghton's *Surfax* products for wetting only, and *Cerfak* for wetting and detergency. The Houghton man can work out with you the best product and the most economical concentration for your needs. Ask him.

This Mill Saved 40% of Size Cost

As frequently happens, we were asked to recommend a size formula for a large mill which was investigating its sizing procedure. In doing so, our technician did not check the price of the size softener formerly used. But when they figured the kettle cost of *Houghto-Size* vs. the previous size, they found a 40% saving. Houghto-Size cost more per pound, but less per kettle, because less was required to do an equally good sizing job.



The heart of the slasher is the size box, and the secret of good warp preparation is the size softner. Use Houghto-Size for more wearable warps!

Be Sure: B-6

That's the brand of *Houghto-Size* that's become popular for sizing of viscose and acetate filament yarn. It beats gelatine, and will not congeal at lower temperatures. It produces a smooth, elastic film, and requires very little plasticizer. Warps come off the dry cans very readily, with no excessive splitting. You'll find Houghto-Size B-6 a real help in preparing rayon yarns for weaving.

Do You Have —

1. *Houghton's Warp Size Handbook* — 180 pages of helpful sizing data and formulas.

2. *Cerfak 1300* — folder describing combined wetting agent and synthetic detergent.

3. *Textile Lubricants* — folder listing recommended oils and greases for all types of textile machines.

4. *Houghto-Wax* — Data Sheet describing new wax-type product for use in cotton sizing solutions.

E. F. HOUGHTON & CO.
301 W. LEHIGH AVE.
PHILADELPHIA 33, PA.

NOW... One Grease applications in the

"The MILLION STROKE Industrial Grease"
A grease that will stand 100,000 punishing strokes of the ASTM Work Tester has been considered a superior lubricant.
In a deliberate attempt to break down Shell Alvania Grease, on the same tester, the run was extended . . . 200,000 . . . 300,000 strokes . . . 500,000 strokes! Finally, at one million strokes the test was discontinued, because this grease would not break down—it was still a fit lubricant both in appearance and consistency.
Combines all these important advantages!
1. Higher mechanical stability than any conventional grease at operating temperatures.
2. Pumpable at low temperatures—even in unheated storage.
3. Stable at high temperatures—superior to the best "soda" greases.
4. Impervious to water—excellent resistance to washing out.
5. Longer Service Life—reduced consumption.

SHELL ALVANIA . . .

will service all grease

majority of plants

SHELL ALVANIA GREASE

Shell Alvania is the one grease that will service all grease applications in most industrial or processing plants. It is already making important changes in maintenance and purchasing practice.

Because Shell Alvania, a patented grease, combines *all* of the advantages of the many special purpose industrial greases, this new lubricant does a highly efficient job in most any application you can name.

Gives you these plant savings:

1. **Extends TIME between greasings**—lasts longer . . . stays in bearings for much longer periods.
2. **Low-cost application**—fewer servicings per year and *only the one grease to handle at any time.*
3. **Simple inventory**—Shell Alvania Grease replaces up to 20 brands formerly required.
4. **Greater safety**—less chance of applying the wrong grease to expensive machinery.
5. **Better protection**—against heat, cold and moisture.

SHELL OIL COMPANY

50 WEST 50TH STREET, NEW YORK 20, N. Y.
100 BUSH STREET, SAN FRANCISCO 6, CALIFORNIA

SHELL

The "MILLION STROKE" Grease

The yarn that got hot and bothered

As you know, yarn isn't always as docile as you see it here.

The combination of temperature and humidity in the mill must be right on the button, else yarn gets hot and bothered . . . picks up static electricity and tangles, catches, snaps and generally raises a costly hob.

Think of the hundreds of knitting machines in a large mill and the loss in production from frequent breakage, and there's your proof of how important temperature and humidity control is. And why foolproof air conditioning equipment is required.

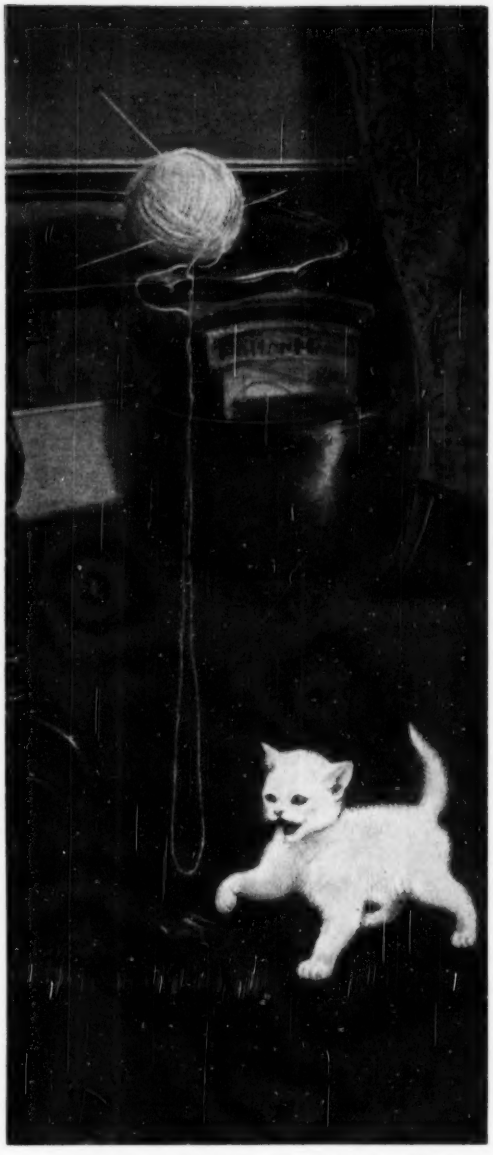
Designing this vital equipment and installing it exactly to individual mill requirements takes some mighty skillful know-how . . . the kind that automatically brings these *engineered* jobs to York.

York knows air conditioning inside and out. For York has handled installations for every imaginable purpose, from personal comfort air conditioning of individual offices or bedrooms to the critical temperature control required in the manufacture of many plastics. More, York is prepared to tackle the challenge of any difficult or complex need that may arise and furnish an answer that works like a charm. And to keep installations perking at peak performance, York offers its unique Certified Maintenance Plan, based on a low yearly fee that's determined in advance.

For Refrigeration, Too

Along with York's reputation for air conditioning is its unquestioned leadership in mechanical refrigeration as well. Since its inception, York has pioneered in the invention and development of methods and equipment to improve business and living conditions, with the aid of mechanical refrigeration and ice making equipment.

When your business plans call for air conditioning or refrigeration of any type, your local York Representative will help you get full York service right from the start. He's listed in your directory. York Corporation, York, Pa.



CONCERNED ABOUT climate in your plant? York engineers and York equipment can make temperamental temperature and humidity *behave*. Rejects and seconds go 'way down, production (from machines and people both) goes up! Whatever you manufacture, it's 99 chances out of a hundred that York has already handled and solved a problem tough as yours.

Our business is improving your business

YORK

Refrigeration and Air Conditioning

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

York refrigeration air conditioning

4 AIDS TO BETTER WET PROCESSING ...WITH PINE OIL

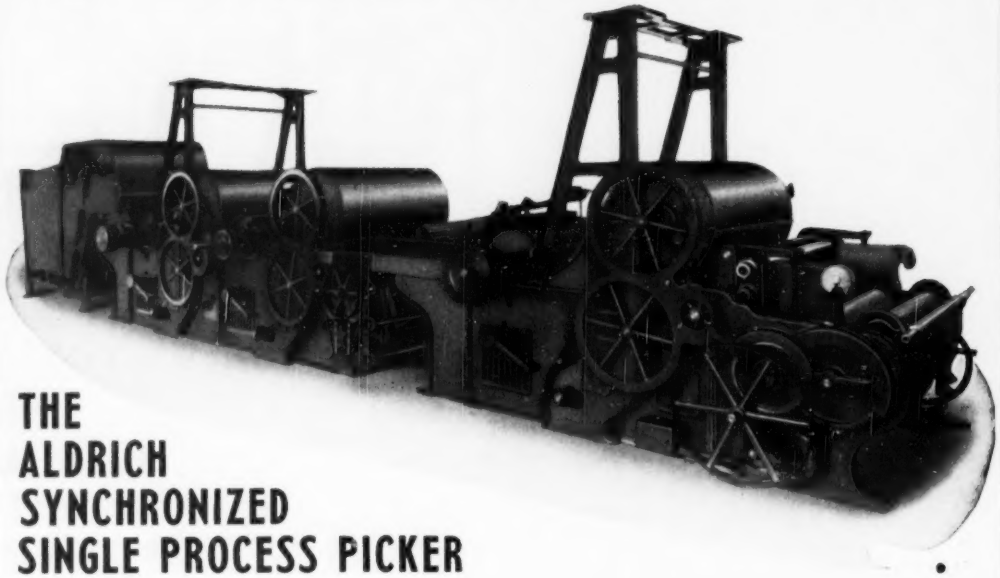
1. THOROUGH CLEANING
2. LEVEL DYEING
3. EFFECTIVE WETTING
4. LOW COST

Wherever you need good, low-cost wetting-out and penetration, remember the time-tested reagent—pine oil. Used in combination with soap or synthetic detergents and wetting agents, Hercules® Pine Oils are still unsurpassed for their economy and effectiveness in such operations as scouring, dyeing, fulling, desizing, kier boiling, and open boil-off. New uses for increased amounts of "Hercules" Pine Oils continue to be found by textile men who want to lower cost or increase efficiency of wet processing. Send for descriptive folder.

HERCULES POWDER COMPANY *903 Market Street, Wilmington 99, Delaware*

NY50-1

FOR MAKING EVENER CARD SLIVER



THE ALDRICH SYNCHRONIZED SINGLE PROCESS PICKER

A true single-process picker, in which the finisher section is fed with a smooth, well-formed lap from the breaker section, instead of with loose cotton from a gauge box or hopper feeder. The Aldrich Synchronizer controls the feed from the breaker section to deliver the lap exactly as required by the finisher.

This makes a lap which is not only quite even yard by yard, but unusually even in every direction throughout the lap. Such a lap will make a very even card sliver.

The feeder on the Aldrich picker is equipped throughout with permanently lubricated ball bearings, which never require attention.

The Aldrich picker has all possible parts in the evener mounted on ball bearings for extreme sensitivity.

The Aldrich picker is equipped with a new and improved, completely silent, sideshaft drive to the evener.

AldricH MachinE

Greenwood WorkS South Carolina

WE DECIDED TO MAKE THE BEST SHEETS

FOUR YEARS AGO WE BROKE GROUND AT GRACE, S. C., FOR THE COUNTRY'S BEST BLEACHERY, SO WE COULD MAKE THE COUNTRY'S BEST SHEETS AND PILLOWCASES. HERE IS THE COMPLETED BLEACHERY, AND HERE IS PROOF THAT WE NOW MAKE THE BEST SHEETS.

"Best Sheets for Wear"—
"Best Sheets for Appearance"

...says famous research organization

All makes of sheets were recently purchased from retail stores by an independent research organization and tested in their laboratory. This organization is so independent that we did not know the test was going on until the results were published. They are so independent, they won't let us use their name. The sheets which topped the test were made by The Springs Cotton Mills and finished at the Grace Bleachery. They did not even have our label on them, but were sold under different brand names. You can buy them under these brand names but if you want to make sure of getting the best for your money, ask for them under the SPRINGMAID label. They are now available to your local store.

When we finish the addition at Grace, it will be the biggest bleachery in the world, unless Elliott Springs isn't the biggest fool in the textile industry and someone else makes a bid for the title by building a bigger one.

SPRINGS MILLS

200 Church Street, New York 13, N. Y.

Atlanta • Chicago • Dallas • Los Angeles • St. Louis

Many people will remember the stories of ELLIOTT WHITE SPRINGS *which appeared in "*LIBERTY,*" "*RED BOOK*" and "*COSMOPOLITAN.*" Later they were published in book form but the plates were destroyed in the London blitz, and they are no longer available. He has taken twenty-one of the best stories and published them in "*CLOTHES MAKE THE MAN,*" together with a new chapter on how to lose friends and antagonize people, how to write advertisements, and how to build cotton mills. If your local store cannot supply you, send a dollar to us and we will send you a copy.*

He has also designed a sport shirt with 16 SPRINGMAID *girls printed in 6 colors on* SPRINGMAID *broadcloth. It is made small, medium, large, and extra large. Send us $3.00, and we will mail you one postpaid in the United States. Children's size 4, 6, 8, 10, 12, 14, 16 are available for $1.25 each.*

19,600 15,940 16,684 15,420 10,244 8,514
5,865 25,400 14,800 16,420 126,800
4,850 18,304 24,800
13,900 7,32

Marquette roller bearing spindles

4,380 17,090 5,200 7,040 7,230
15,320 4,960 5,060

with *full-floating* footstep bearing

27,000 5,400 4,800 5,300 4,416
6,712 26,800 7,200 11,300

for cotton, rayon, nylon, wool and worsted

5,280 4,780 3,536 8,400 8,200
7,100 7,700 5,300 14,400 5,000
12,100
18,950 22,600 5,000 20,076
20,904
17,832 30,538
10,752 29,904

The above figures represent some installations of Marquette Roller Bearing Spindles. In certain cases they were purchased to modernize old frames; in other mills they were specified on new frames. They save power, save tapes, save lubricant, and require less maintenance. They increase production through higher speeds, fewer ends down, and larger packages. Result: MORE YARN AT LOWER COST.

Let us prove this through a test installation. Contact our home office or one of our representatives.

PROTECTED BY U. S. AND FOREIGN PATENTS, AND PATENTS PENDING

The Marquette
METAL PRODUCTS CO.
CLEVELAND 10, OHIO
SUBSIDIARY OF CURTISS-WRIGHT CORPORATION

Representatives:
BYRD MILLER, WOODSIDE BLDG., GREENVILLE, S. C.
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Also Manufacturers of: HYDRAULIC GOVERNORS • FUEL OIL PUMPS • FUEL OIL INJECTORS
WINDSHIELD WIPERS FOR AIRCRAFT, TRUCKS AND BUSSES • PRECISION PARTS AND ASSEMBLIES

Trends Indicated in Industry Area Survey

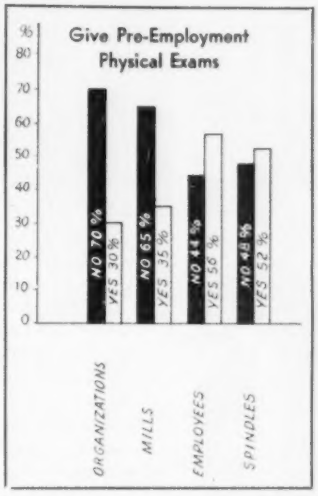
Textile Industries
Vol. 114 • May 1950

1. **Pre-Employment Physical Exams**
2. **Industrial Vision Programs**
3. **Dental Clinics**
4. **Paid Vacations**

FIFTY-SIX PER CENT of the textile employees in areas studied receive pre-employment physical examinations, according to a total-area sample survey made by the editors of TEXTILE INDUSTRIES. These employees operate 52% of the spindles in the areas surveyed.

On an organization basis, 30% give pre-employment examinations; this represents 35% of the mills. With 35% of the mills but 52% of the spindles offering pre-employment physical examinations, it is obvious that the practice is more prevalent in the larger organizations or larger plants.

The survey shows that 70% of the organizations, 65% of the mills, 48% of the spindles, representing 44% of the employees, do not give the physical examination before employment.



Vision Programs. Twenty-three per cent of the mills surveyed have an industrial vision program so that the eyes of the operatives may be tested to determine if glasses are needed. With but one exception in the sampled areas, the mills do not pay for the services of the occulist, nor do the mills pay for glasses.

One company operates a canteen service, the profits from this being made available for glasses needed by the employees. One mill also arranges for the employees to get the glasses "wholesale."

Medicines. The survey further showed that it is not the practice of the mills to pay for medicines required by the employees or their families. In rare instances, preventive innoculation shots are given to the employees gratis; only occasionally does this service extend to the family of the employee.

Dental Clinics. Free dental programs are not offered as a practice, except when dental clinics are part of a community program. A further exception to this is that the mill may secure cheaper dental rates for the employees. (Although the survey disclosed no free dental clinics, an instance is known whereby the mill put on a free dental program for all in the community; this organization did not come within the scope of the survey.)

Trained Nurses. As a general rule, full-time trained nurses are kept on duty only by the larger plants. In communities having nearby and excellent hospital facilities, the mills reported little need for a full-time nurse.

Some states have fostered a program of training supervisors and key men in First Aid. This training was said to have been instrumental in getting good care for injured employees.

Paid Vacations. The survey also showed that all but a very few of the mills in the areas sampled give paid vacations.—J. C. F.

HOW SURVEY WAS CONDUCTED

THE SURVEY was conducted in several southern states on personal visits to the mills by the editors of TEXTILE INDUSTRIES. The total-area sample method was used, whereby all of the mills within a chosen radius were polled. Enough areas were used to give a good sample. Knitting and woolen mills were not included.

To check sampling procedure, the sample of one state was enlarged to include approximately sixty per cent of the spindles. As a further check on the reliability of the sample, questions were injected into the questionnaire on which previously compiled industry figures are available.

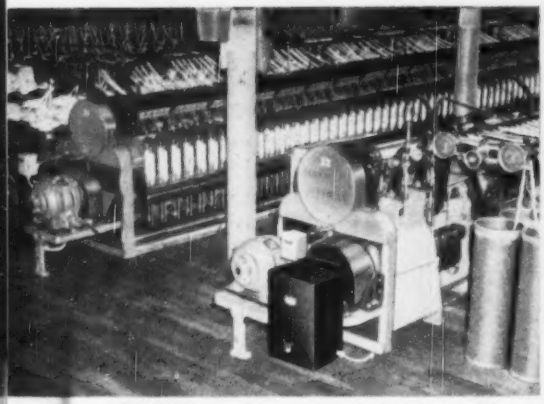
Although any method of statistical selection may be criticized, the editors believe that the sample is large enough to indicate a trend in the areas covered.

Even though the double checks made from known figures prove the reliability of the survey, readers are cautioned against an attempt at projecting the percentages for application to other areas or other branches of the industry.

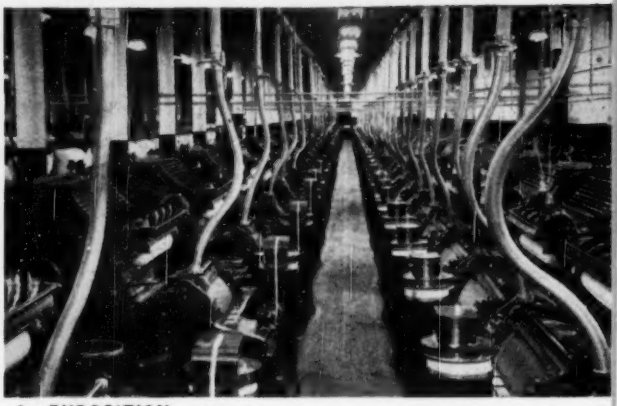
Note: An "organization" may be composed of only one plant, or an organization may represent several plants. The term "mill" indicates a single unit. Thus, where an organization answers, one or more mills may be included in the total. Few industry statistics are based on organizations; most statistics apply to mills, spindles, or employees.

CUTLER-HAMMER

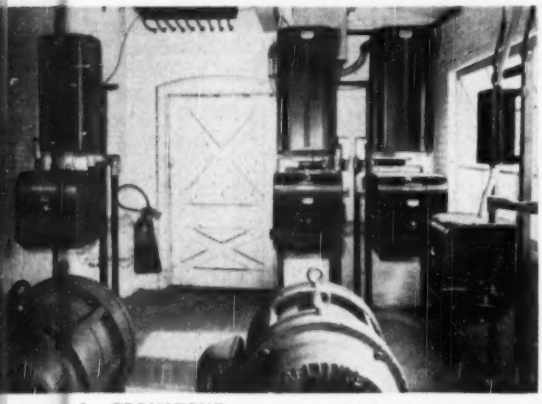
MOTOR CONTROL FOR THE TEXTILE INDUSTRY



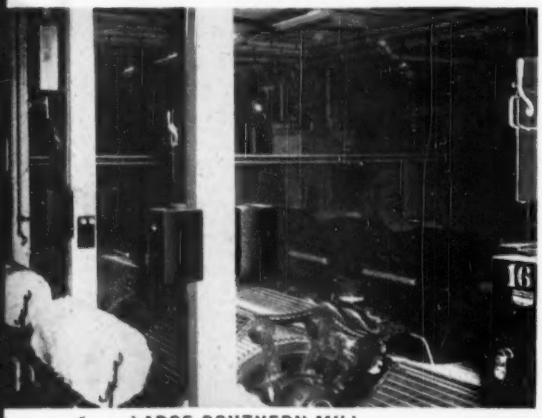
for FISHER at Fisherville, Mass. Cutler-Hammer Primary Resistance Starters are used to provide smooth starting as well as constant protection on these roving frames.



for EXPOSITION at Atlanta. Not only are Cutler-Hammer Card Controllers used on these individual motor driven cards, but Cutler-Hammer Motor Control is used throughout the plant.



for EDDYSTONE at Eddystone, Pa. Cutler-Hammer Safety Switches and Autotransformer Type Manual Starters stand guard over the performance of m.g. sets for cloth printing machines. Cutler-Hammer control widely used here.



for a LARGE SOUTHERN MILL. Cutler-Hammer Card Controllers are standard equipment in this great mill in North Carolina.

Not just inside the box

Motor control is never just a matter of what you see "in the box". To wise buyers, it is always a question of how much experience and how much "know-how" is behind it and *in* it. That is why Cutler-Hammer motor control specialization is so important to many such buyers. The control this company builds for the textile industry is the product of a specialization that dates back to 1892. Step by step, as electric motors developed, as their application spread from industry to industry, Cutler-Hammer kept pace all the way, designing and developing control to make these electric motors fully useful and dependable. That is why you will find features and values in Cutler-Hammer Motor Control for the Textile Industry that could have been gained in no other way. That is why mills that want maximum production insist on Cutler-Hammer control. Where the need for dependability is paramount, buyers naturally want the control that is world-famous for dependability. CUTLER-HAMMER, Inc., 1456 St. Paul Ave., Milwaukee 1, Wisconsin.

CUTLER-HAMMER CARD CONTROLLER

With integral drum type reverse switch

Here in one self-contained unit is all the control needed for a card . . . convenient pushbutton starting and stopping *plus* an integral reverse switch for cleaning and grinding. Card cannot be reversed accidentally or by any unauthorized person when controller case is padlocked. Easier to install. Easier and safer to use. Felt-gasketed against lint. Famous Cutler-Hammer Eutectic Element Overload Protection specially arranged to provide long starting time (required for cards) without loss of normal operating protection.

CUTLER-HAMMER
MOTOR CONTROL
C-H

Visit Cutler-Hammer Booths 126AA and 126BB, American Textile Machinery Exhibition, Atlantic City Auditorium, May 8 to 12, 1950.

NEWS in BRIEF

Price Support. The Department of Agriculture has announced that there will be no price support for long staple cotton produced in 1950. The department's solicitor has determined that it is not a "basic" commodity. Production in 1949 was 4,300 bales; for 1950, estimated 100,000 bales.

Scholarship. To meet the growing need for attracting capable young people to the manufacture of textiles and to provide the education that will help them, S. Stroock & Co., Inc., has awarded a scholarship for 1950-51 in textile technology at the State Institute of Applied Arts and Sciences of the State University of New York.

To Wash All of Iceland's Wool. The ECA has sent an electric wool-washing machine to Iceland to revive the country's textile industry. The 182-ft machine is capable of washing the island's entire wool output, some 600 metric tons annually. Before the war wool was hand-washed by farmers prior to marketing.

Styles for Early Life. Chicopee Mills, Inc., has introduced gauze diapers; they come in three pastel shades.

Spinning Test Lab. A miniature spinning test laboratory, to serve the entire cotton industry by relating fiber properties and processing procedures, will be established at the University of Tennessee, Knoxville.

Canadian Modernization. Canada's textile industry spent over $46 million on expansion and modernization during 1949. About half of this was estimated for importation of specialized textile machinery.

Safety Training Film. "Easy on the Eyes" is a new safety training film which should convince the skeptical workman that it is smart to wear safety glasses. Available for purchase, preview, or rental from National Safety Council, 20 N. Wacker Drive, Chicago.

Asbestos-Glass Fabric. U. S. Rubber Co., has started production of a new asbestos-glass fabric for curtains and draperies which is decorative as well as fire-resistant. Made of glass yarns interwoven with asbestos yarns, it is available to converters in the grey for dyeing and printing. Other qualities: light weight, stable under atmospheric changes, high strength, low stretch, good resistance to abrasion.

Get Age Certificates. Textile manufacturers can protect themselves from unwitting violation of the child-labor provisions by obtaining age certificates for minors up to 19 years of age in general employment, and for those claiming to be 18 or 19 years old if they perform hazardous work.

To Test New Apparatus for Atmospheric Fading. The new type of atmospheric fading testing apparatus, wherein a test cycle of 4 to 10 minutes will reproduce the equivalent of one AATCC unit of fading, will be evaluated by the research sub-committee on atmospheric fading of the American Association of Textile Chemists and Colorists.

QM Purchasing Policy Speeded. Future purchasing programs of the Quartermaster Corps for supplies other than food will be conducted so as to provide a minimum of 90 days between contract award

TECHNICAL STAFFS FOR ASSOCIATIONS?

Technical Staffs for Associations? The opinion has been expressed by textile officials that state and national textile associations could be more effective and render the industry a greater service if emphasis were placed on technical processing methods, in addition to usual associational activities. Such a move sponsored by management, it is pointed out, would permit voluntary exchange of information, coordination on research and processing tests, and quicker progress in technical matters—without disclosure of mill secrets.—News Brief from "Textile Industries," April 1950, page 113.

The following letters from industry sources discuss the above.

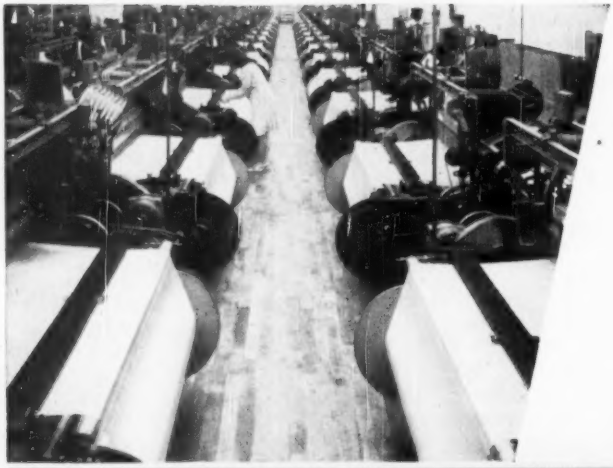
"Might Be." This is a field in which our trade associations might well be very helpful.—Exec. Vice-Pres.

"Textile Engineer Effective." These associations could be much more effective if they had a good textile engineer with mill experience on their staff, or at the head of the association with the proper organization underneath him as a staff or line group to carry out the various necessary functions that now seem to be desired. In the state and national meetings so much time is consumed with reports from the tariff committee, the freight rules committee, the legislative committee and so on that the sessions become rather deadly.—Vice-Pres.

"Grown Away from Technical Questions." I don't know what opinions you are going to get expressed on the question of our state and national associations taking up technical questions, but I cannot follow with anybody who advocates this, especially on the grounds that the top executives could ex-

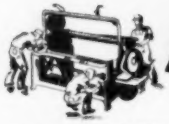
(*Continued on page* 197)

"How Productive can an old loom be?"



Maybe your looms are not as old as you think! It is most likely that the Wilson way of loom renovation will bring about the increased production you want, whether your looms are ten, twenty, or even forty years old. The Emil V. Wilson Co. has successfully accomplished weave room modernization programs from New England to the Gulf Coast. Their surprisingly economical services include overhauling by experts, replacing worn parts, installing attachments where wanted, and alteration for weaving new constructions . . . right on the mill's own floor, with a minimum of interruption. For information about your own needs, wire, write, or telephone today.

New England Agent:
WILLIAM R. FOX
Box 380
Providence, R. I.
Phone East Providence 1-4168R



Emil V. Wilson Co., Inc.
309 STOKES BUILDING TELEPHONE 3-3643
Greenville, South Carolina

LOOM MODERNIZATION SPECIALISTS

and initial delivery of materials. Exceptions: purchases for special programs.

Deionization. Use of a special dyed mixture of Amberlite resins which change color as the bed becomes exhausted was announced for deionization by Rohm & Haas. User is said to have ample notice of exhaustion, without instrumentation.

Carpet Abrasion Tests Criticized. According to spokesmen of the carpet industry, mechanical wear testing should be confined to the mill laboratory. Manufacturers are concerned about the growth of abrasion testing by retailers as a means of comparing competitive brands of flood covering.

Abrasion tests, they state, are only instrumental in the evaluation of experimental fabrics by qualified technicians and also as a quality control measure. Furthermore, the correlation between actual wear and controlled abrasion hasn't been determined. Machine wear data in the hands of non-technical personnel may be subject to erroneous interpretation.

HOSPITAL SHEETING "BREATHES OFF" PERSPIRATION

Vapotex, a new synthetic rubber coating, is used in making hospital sheeting which is waterproof and "breathes off" body perspiration. The rubber coating may contain as many as 2½ million holes per square inch and is produced by The Goodyear Tire and Rubber Co. The sheeting is being produced by Industrial Covers of Akron.

Sanitized Shoe Linings. Shoe lining materials can now be treated to cut down the chance of reinfection from fungi which cause athlete's foot. Shoe manufacturers may spray or dip shoe linings, canvas, and cloth shoes with a solution of 3-phenylsalicylate, a chemical which will reduce the spore count of athlete's foot fungi below the reinfection point.

Rayon Shipments Improve. Rayon shipments in February totaling 93,900,000 pounds were 8% below the 102,200,000 pounds delivered in January but were 20% above shipments in the corresponding month of 1949. 1950 shipments in January and February were 18% above shipments in the corresponding period during 1949.

Low Temperature Rubberized Fabric. Rubberized fabric, capable of giving useful service in temperatures more than 85 degrees below zero, is now being manufactured by the B. F. Goodrich Company. The fabric is impregnated with a special type of man-made rubber.

"Secret" of Long Wearing Nylons. The Army has revealed the secret of why the nylon stockings it purchases for members of its women's armed forces last longer than those available at retail hosiery counters. It's simple: The QM buys only 45-gauge, 40-denier hose, in comparison with the 51-gauge, 15 to 20-denier hosiery which most women purchase.

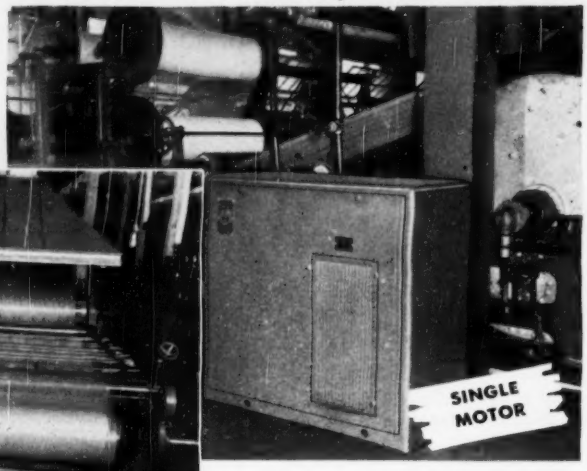
Ten Commandments for Community Leadership. Another name for community relations is public opinion, a more familiar label which tends to place emphasis on the need to influence it in favor of the company, according to a report to the Labor Relations Institute. The Institute report contains ten working commandments for community relations. Free copies available from The Labor Relations Institute, 1776 Broadway, New York 19, N. Y.

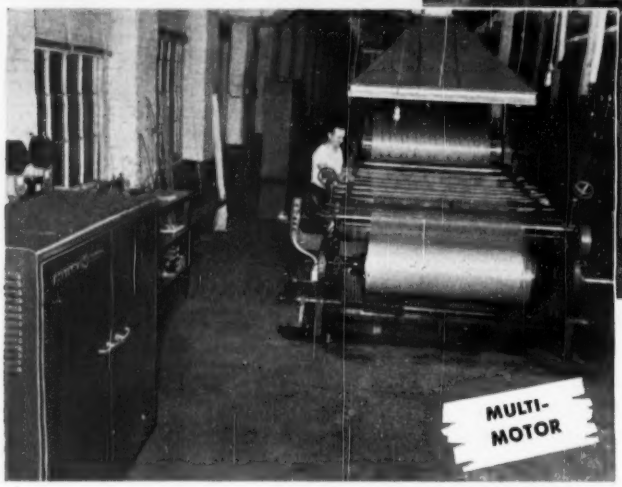
Wool Artificially Crimped. A profound change in wool manufacture and marketing is expected shortly when a commercially feasible wool crimping machine will be announced to the industry. Now under wraps, the technique is eagerly being sought by several apparel and carpet wool mills. The machine is capable of mechanically imposing an artificial crimp in wool stock which has been subjected to a plasticizing atmosphere. In this manner, cheaper, coarser, or uncrimped wools can be made to simulate merino stock.

ECA Appropriations May Affect Cotton Prices. Harold A. Young,

Choose RELIANCE V★S SLASHER DRIVES

for MORE FLEXIBLE CONTROL





★ Slow, stable creeping speed

★ Pre-set running speeds

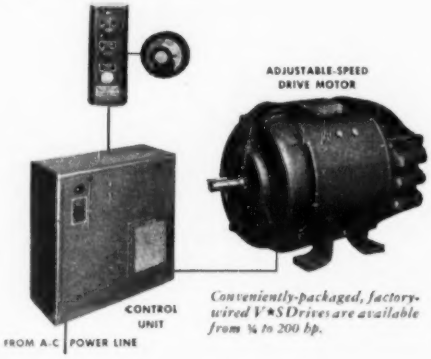
★ Smooth acceleration and deceleration—easily adjustable

★ Stepless speed adjusting for moisture control ★ Available as single or multi-motor drives

★ Maintains constant tension (multi-motor)

Based on the time-tested and proved Reliance V★S System, the Reliance Slasher Drive with VSC for either Single Motor or Multi-Motor operation offers flexibility of control unmatched by any other type of drive. In addition, this completely packaged drive saves space—is easy and inexpensive to install—is simple and economical to operate—requires a minimum of maintenance. A Reliance Application Engineer will give you complete details on all of the advantages of the V★S Slasher Drive, including its functional adaptability to any set of requirements. Just phone or write your nearest Reliance office.

Sales Representatives in Principal Cities



Conveniently-packaged, factory-wired V★S Drives are available from ¼ to 200 hp.

RELIANCE ELECTRIC AND ENGINEERING CO.

"Motor-Drive is More Than Power" • 1085 Ivanhoe Road, Cleveland 10, Ohio

president of the National Cotton Council has asserted that the Vory's amendment to substitute a billion dollars in CCC surplus agricultural commodities for cash in ECA appropriations may affect cotton prices in that if foreign markets are closed to three million bales from the 1950 crop, domestic market prices are likely to sag to the loan level.

U. S. Textile Exports Hurt By Morroco's Embargo. Over $3 million worth of U. S. cotton goods went to Morocco in 1948, and sales were $600,000 in January, 1949; however sales have become negligible since an embargo was applied. The potential market is estimated at more than six million yards. Much of this business, which formerly went to the U. S., has been given to Poland and Czechoslovakia.

Cotton Cloth Exports. U. S. exports of cotton cloth last year were 139% greater than those of the prewar year of 1939. Exports of cotton cloth in 1949 totaled 880,205,000 square yards, a decline of 6.4% from the 1948 level.

Slide Film Series on Synthetics. The Celanese Corporation of America has produced the first three in a series of educational slide films on rayon yarns and textiles for showing to department store personnel. Title of this first series is "A Modern Yarn For Modern Living." Purpose of the film is to arm the retail salesperson with factual information of use in selling textiles made of chemical yarns.

Promote Use of Japanese Silk. The Japanese silk reeling industry and other elements of the trade there are working on a plan to contribute funds on a continuing basis to promote silk consumption, especially in the United States.

Britain Again Chief Exporter of Cotton Textiles. For the first time since 1933, Great Britain has regained the position of chief supplier of cotton goods to the world markets (1949), according to the Cotton Board in London.

YOU ARE SUPPOSED TO LOOK AT THE CHAIR

Lumite (Chicopee) material combined with feather light aluminum tubular frames create a new type of outdoor chair that can endure severe weathering and the havoc of beach life. Comes in several colors.

Nylon Consumption. In 1949, 24 million pounds of continuous filament nylon yarn went to the domestic ladies hosiery industry, the first big use for nylon. The balance of filament yarn production was divided as follows: all other types of knitting, 25%; broad weaving, 49%; industrial and military uses, including tire cord, 22%; and miscellaneous applications, 4%. Staple production went largely to sweaters, half-hose, and broad weaving, including automobile upholstery fabrics.

25% Tax Peril Point. According to Colin Clark, British and Australian economist, an economic law is evidenced when the tax burden reaches a certain point and governments take the easy way out by monetary devaluation, deficit spending, and inflation, rather than levying additional taxes. Clark's research revealed that the critical limit of taxation is about 25% of the national income.

Carpet Manufacturers Dispute Rayon Standard. Efforts by some components of the carpet industry to limit the type and denier of rayon which may be used in floor coverings is being met with resistance. Price advances of carpet wools are forcing mills to supplement carpet blends with rayon staple. Several large producers fear that indiscriminate use of rayon might lead to consumer dissatisfaction with wearing characteristics of rayon-wool blend floor coverings and thereby weaken the industry-wide rayon utilization program. Other mills, concerned about potential shortages of rayon staple and the possible cornering of the market by large purchasers, prefer rayon-wool carpet manufacturing unrestricted by self-imposed rules.

New Stock Offered Westinghouse Employees. A new issue of 500,000 shares of common stock to be sold to employees at below market prices through a continuous payroll deduction plan has been registered with the Securities and Exchange Commission by the Westinghouse Electric Corporation.

British Textiles to U. S. During 1949 nearly five million square yards of woolen and worsted cloth were produced for the American market by the British textile industry.

New Cast Iron. International Nickel Company now has available a new cast iron which is not brittle, but which can be bent or twisted. Known as ductile cast iron, it has several times greater strength than ordinary cast iron, and has greatly increased ductility and shock-resistance.

Tricot Let-Offs Needed. At least six machinery manufacturers are engaged in a race to perfect beam let-off drives for tricot and simplex type knitters. Tricot goods

HIGHLIGHTS of a MODERN DYE BECK

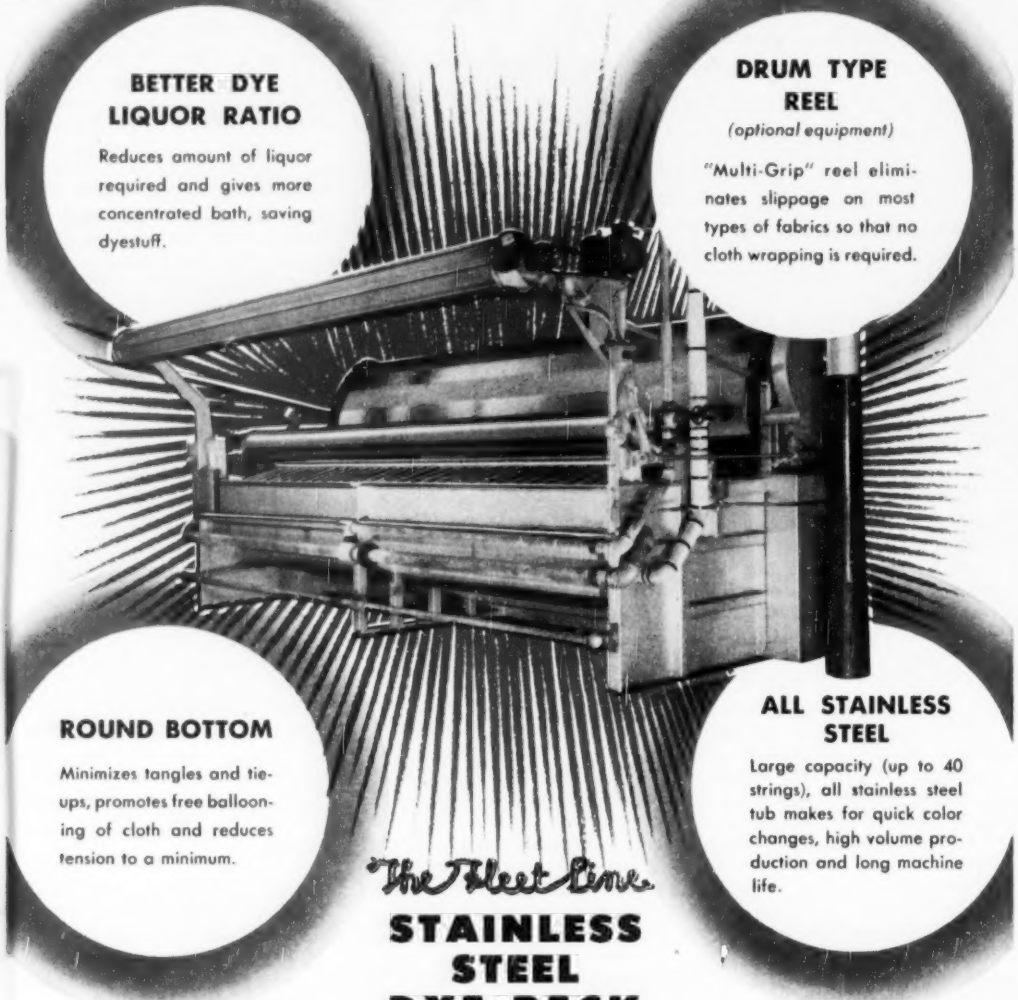
BETTER DYE LIQUOR RATIO

Reduces amount of liquor required and gives more concentrated bath, saving dyestuff.

DRUM TYPE REEL

(optional equipment)

"Multi-Grip" reel eliminates slippage on most types of fabrics so that no cloth wrapping is required.



ROUND BOTTOM

Minimizes tangles and tie-ups, promotes free ballooning of cloth and reduces tension to a minimum.

ALL STAINLESS STEEL

Large capacity (up to 40 strings), all stainless steel tub makes for quick color changes, high volume production and long machine life.

"The Fleet Line"

STAINLESS STEEL DYE BECK

Further information on Request

RIGGS AND LOMBARD, INC.

FOOT OF SUFFOLK STREET, LOWELL, MASS.

"The Fleet Line" — A complete line of modern equipment to successfully handle present day wet-finishing, carbonizing and dyeing requirements.

AMERICAN TEXTILE MACHINERY EXHIBITION ATLANTIC CITY MAY 8-12 1950

DOMESTIC AGENTS — Paul A. Morrison, 1491 Broad St., Providence, R. I. • Horace C. Oster, 6313 Sherwood Road, Philadelphia, Pa. • Charles H. Booker, 1526 South Maple Ave., Los Angeles 15, Calif. • Albert B. Brown, 89 E. Jackson Blvd., Chicago 4, Ill.

EXPORT AGENTS — Latin America — Balkan States, Egypt, Palestine, India — Meyer, Lyra & Co., 228-229 Fulton St., N. Y., N. Y. • South Africa — Noel P. Hunt, Pty., Ltd., Embassy House, 326 West St., Durban, South Africa • China — G. E. Coleman & Co., Inc., 80 Church St., N. Y., N. Y.

producers have also been busy designing let-off motions. An automatic warp drive would improve performance of warp knitting machines considerably, yielding higher speeds and greater versatility, by taking the load off the needles.

Double-Wovens for Sport Clothes. Producers of double-woven gloves are eyeing the lucrative men's sportswear market. A decline in glove sales, which might reach serious proportions by midsummer, is forcing manufacturers to find other channels for double-woven fabrics. The most promising use appears to be in outerwear fashioned with suede leather which double-woven fabric can easily simulate. The big problem is how to maintain a perfect knit quality for the large cutting required for a body garment.

Study of Cotton's Markets. A study of the market outlets for cotton products has been prepared by the National Cotton Council, Memphis, Tenn. This newest market publication by the council is entitled "Cotton Counts Its Customers."

Wool in Suit Compared to Sale Price. The wool used in a man's $50 suit represents less than 11% of the retail selling price. The other 89% represents manufacturing, labor, and distribution to the consumer, according to The Wool Bureau.

Employee Can't Talk Back. Only about one in 20 companies using employee publications, bulletin boards, letters, advertisements, and public address systems to reach their employees, have any effective method for allowing employees to talk back, according to the public relations firm of Dudley, Anderson & Yutzy. The rare companies which do encourage actual two-way communication invariably enjoy exceptionally good labor relations, it was said.

Knitted Underwear Standardized in Canada. Industry size standards for 88 types of men's, women's, and children's knitted underwear have been set up and approved by the Canadian underwear manufacturers who represent 90% of Canada's production.

Laundering Time Reduced. Newest investigations in washability of cotton fabrics point toward radical eclipsing of laundering time. One company experimenting in this field has condensed the time to 15 minutes and expects to further decrease it. Fully automatic washing machines and improved detergents are the key. Coincidently, water consumption has been enormously reduced. Application of these methods to the cotton finishing industry is also being studied.

Sewing Nylon Woven Fabrics. Research by DuPont and allied suppliers serving the fabricator trade has produced helpful information on sewing of nylon woven fabrics. With the help of high-speed motion pictures, it has been learned that certain techniques in laying out patterns, adjusting thread tensions, and proper selection of needles, thread and seams all contribute to making better and more attractive nylon garments.

Overseas Buying Guide. The Economic Cooperation Administration will publish a directory of the names and products of American small business firms for the attention of overseas buyers. It will contain a listing of those firms which desire to enter or continue in export trade under the Marshall Plan.

V-Belts Checked for Static Properties. By means of a 500 volt Megger unit, V-belts manufactured by B. F. Goodrich are checked for static properties before shipment to consumers.

Marshall Plan Helps Belgium Sell Looms. Belgium is selling more automatic looms to Western European countries as the result of the Marshall Plan's system of "drawing rights" in intra-European trade. The Picanol Plant has reached a volume of 150 looms per month under the program.

RABBIT FUR INLAID ON WOOL FABRIC

FUR FIBER inlayed finishes are now available to manufacturers and users of woolen or worsted fabrics. Developed by Pellissier, Jonas & Rivet, Inc., the technique is covered by process and product patents. No adhesives or other bonding agents are employed.

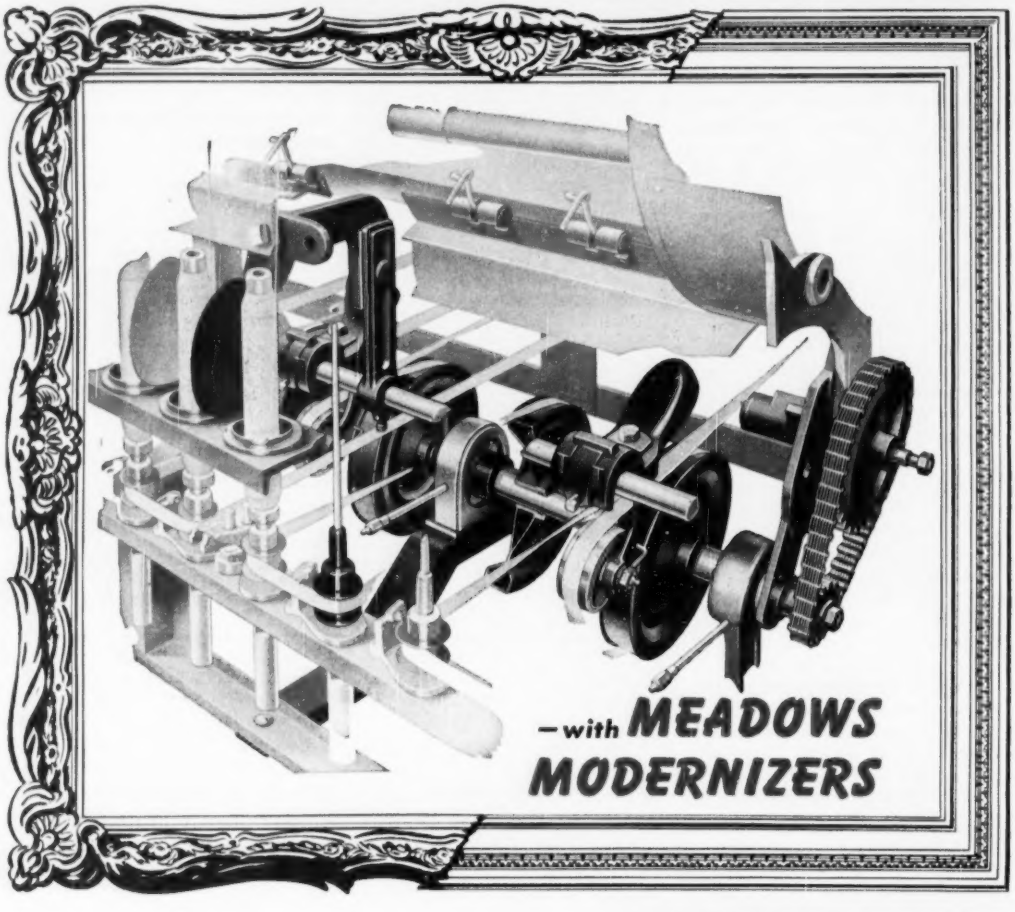
Essentially, the pertinent machinery forms a continuous fur fiber web of predetermined thickness which is then superimposed on a grey fabric base. Webs may be applied over the face or back of the cloth, integrating with it so as to partially penetrate through to the opposite side. Weight of these fur laps can be varied from 4 to 8 ounces per yard.

The process is limited to goods 60 inches wide or less for the time being. A program is underway to extend fur inlaying to knit goods and fabrics constructed of synthetic yarns. It is claimed that dry cleaning will not alter the appearance or composition of the fur inlayed fabric.

Cost is expected to be determined by the nature of fur blend used and the weight of application. The finished fabric has a luxurious surface texture and soft hand especially desirable in coats, suits, and other outerwear. Ornament of the base fabric may be retained or concealed depending on the designer's choice.

Note: The article "Processing Fur Blends on the Cotton System" beginning on page 92 will be of particular interest to those readers making or contemplating the manufacture of yarns and fabrics utilizing animal hairs. It is full of helpful manufacturing information.—Eds.

NEW LIFE TO OLD FRAMES



OLD FRAMES can be fashionable when modernized with Meadows Conversions. In fact, old model band-driven or tape-driven frames can actually be made competitive with new frames at a *fractional part* of the cost of new equipment. Meadows Conversions consist of ball bearing tape tension pulleys, light weight solid aluminum separators, silent chain drive, individual drive pulley, and ground and polished shafting mounted on heavy duty ball bearings. With them you are assured of *low power consumption, no tapes off* due to choked or sticky pulleys, *less wear on yarn, increased output* and *no more cylinder trouble.* More than eight million spindles are today turning out more and better yarn at lower cost through being equipped with Meadows Modernizers. Why don't you investigate — *today!*

MEADOWS
MANUFACTURING COMPANY
ATLANTA, GEORGIA

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Mexico, D. F.

AN

EXECUTIVE VIEWS

THE NEWS IN TEXTILES

Prepared by a man who is closely identified with the textile industry.

Foreign Competition

It seems to us that the question paramount in the minds of most textile men today is this: "How much is competition from foreign textile mills going to damage the American industry?"

There is, of course, some interest in the matter of exports of American cotton and synthetic goods, and in the last year or two there has been quite a bit of talk about safe-guarding the "10 per cent of our production which goes into export markets." In recent months, however, there has been less and less talking about safe-guarding the 10 per cent, and more talk about protecting the 90 per cent of our production which stays in the United States.

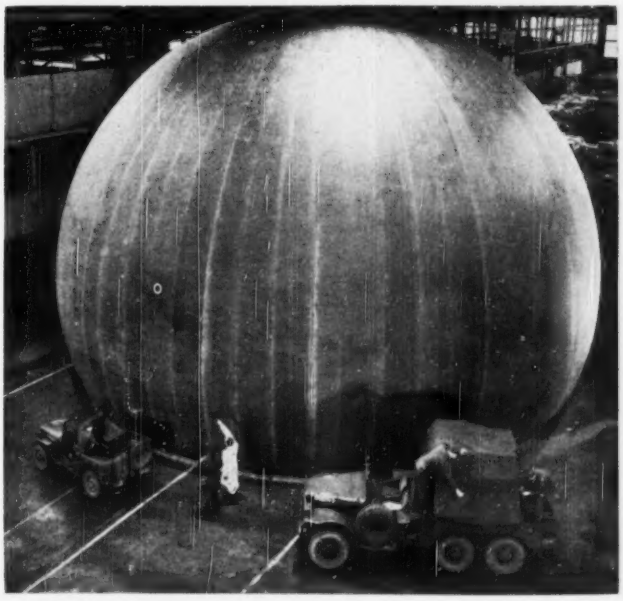
As a matter of fact, the so-called "10 per cent" has now dribbled down to a trickle. As Ellison S. McKissick, retiring president of the American Cotton Manufacturers Institute, pointed out in his speech at Palm Beach a few weeks ago [for details, see story on page 108], we are faced with the virtual loss of our export markets. We exported nearly a billion and a half square yards of cotton cloth in 1947, but by 1949 this figure had been cut practically in half.

As we go well into the year of 1950, it is not difficult to see that exports this year are going to be almost non-existent when compared with an annual production of 10 or 11 billion square yards of cotton goods alone.

Therefore, it is not too difficult to see why textile manufacturers are thinking now in terms of competition from Japan, from Germany, from Italy and from other low-wage countries, rather than in terms of selling for foreign markets. Apparently, quite a few manufacturers have not forgotten the period around 1937 and 1938 when Japanese goods were knocking the props out from under American cotton mills, and doing it in spite of the tariff protection which existed at that time.

Where is the Tariff?

In the years since 1938 the political philosophy of this nation has gone through a series of gyrations and somersaults which leaves some of us wondering if there will be any tariff at all within a few more years. There is little doubt that this is a "free trade" administration, and there is little doubt that all the emphasis is now on the reduction and elimination of tariffs, the international control of production and prices through the proposed ITO, and upon the spreading of Amer-



TEXTILES PROTECT RADAR INSTALLATIONS FROM WEATHER

Rubberized fabric radomes are being made by The Firestone Tire and Rubber Company to protect Air Force radar installations from wind, snow, sleet, and ice. Rayon, nylon, or Fiberglas fabric is covered with rubber to make the outer skin of the giant radome which measures 167 feet in circumference and 36 feet in height. Designed to withstand 125-mile-an-hour winds, the balloon-like shelter is held up by a twentieth of a pound of air pressure without any metal or wood supports of any kind.

FOR DE-SIZING

RAPIDASE®

Heat-stabilized amylolytic enzyme preparation, liquid. Solubilizes starch sizing in cotton, rayons and mixed goods . . . at extremely high temperatures. *De-size faster at lower cost with Rapidase.*

RAPIDASE-M **Intermediate strength—with all the characteristics, quality and value of Rapidase. For those who prefer a de-sizing agent of higher concentration.**

RAPIDASE-CONCENTRATED **For those whose needs demand a de-sizing preparation of highest unit strength. Because of its high concentration, greater economy is obtained in freight handling and storage expense.**

ZYMEX®

A powdered amylolytic enzyme preparation in high concentration. For those who prefer the convenience of a powdered enzyme . . . with all the advantages and economy of Rapidase.

SERIZYME®

Proteolytic type liquid de-sizing agent. For de-sizing fabrics containing gelatin, casein, soya and other protein and albuminous sizes. Produces a finer, softer hand, more uniform quality, clearer cross dyes.

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ican philanthropy and benevolence through all the nations of the world.

The planners and the "do gooders" paint a beautiful picture of the bright new world which will come about when national and international regulation will hold full sway, but they do not say anything about what will happen to this new world in the event the next war should find America's wealth and her industrial might scattered through the back streets of Japan and Italy and Germany.

The day may come when American cotton mills can compete with Japanese mills, but it will not come as long as the Japanese makes 10 cents an hour and the American operative makes $1.11 an hour. Percentage-wise it is true that Japanese imports are not particularly important to America: but what many of us miss is that a few thousand yards of osnaburgs coming into this country at cut-rate prices can do quite a bit of damage to the price structure of the American cotton goods market. That is what has American manufacturers worried.

More "Road Ahead"

A few issues back we described in glowing terms John T. Flynn's latest book, *The Road Ahead*. Since that time we have had an opportunity to read the Lincoln Day sermon of Dr. Walter R. Courtenay, pastor of the First Presbyterian Church, Nashville, Tennessee, which was based upon Mr. Flynn's book.

Dr. Courtenay does a masterful and sincere job in pointing out the situation in England as compared with the situation in United States. He points out the godless path of socialism, and concludes with these words: "God save America. God save the world through America. God save America through us."

Hearing the talk of superbombs, the earnest and devout man can only express a fervent "Amen."

During his sermon Dr. Courtenay quoted a parody on the Twenty-third Psalm which was recently carried in the Memphis *Commercial Appeal* as follows:

> "The State is my shepherd, I shall not work; it maketh me to lie down on good jobs; it leadeth me by the still factories. It deadens my soul; it leadeth me in the paths of idleness for politics' sake. Yea, though I walk through the valley of slothfulness and economic disaster, I will fear no evil, for it will be with me; its dole and paternalism, they comfort me. It prepareth a Utopia for me by appropriating the earnings of the frugal; it filleth my head with fool expectations; my mounting inefficiency runneth over. Surely goodness and mercy shall follow me all the days of my life; I shall live on the bounty of the State forever."

Again, as thoughtful Americans view the political philosophies which are all around us today, we can express another fervent "Amen."

Flags of all Nations

Cotton people are all agog over a recent announcement from Washington which indicates that henceforth and perhaps forevermore the American flag will be made from nylon entirely. No cotton. To cotton people, the hard part to swallow is that the government flag boys claimed, in making their announcement, that the reason for this change was that nylon would last longer. They claimed it would withstand better the breezes which blow around Federal buildings. It seems to us that if nylon can do that its future is secure. Certainly no other textile fiber can make that claim.

Migrating Reporter

With that sage word of wisdom, this reporter will cover his battered portable and force himself to attend another of the many textile conventions which were mentioned in this column last month. If the Brotherhood of Textile Magazine Correspondents, or something, was a little stronger this harried writer would not allow himself to be forced into going to such places as Biloxi and Daytona, but after all a man must make a living.

After all, what's so bad about Communism? I'll bet correspondents for Stalin's "Daily Worker" don't have to go to Biloxi!

May 8-12—American Textile Machinery Exhibition, sponsored by National Association of Textile Machinery Manufacturers, Atlantic City Auditorium, Atlantic City, N. J.

May 11-13—Annual meeting, Cotton Manufacturers Association of South Carolina, Fort Sumter Hotel, Charleston.

May 11-13—Annual outing, Carolina Yarn Association, Carolina Hotel, Pinehurst, N. C.

May 17-19—Fiftieth annual (Golden Anniversary) convention, Cotton Manufacturers Association of Georgia, Sheraton Plaza Hotel, Daytona Beach, Fla.

May 25-26—Annual outing, Chattanooga Yarn Association, Lookout Mountain Hotel, Chattanooga, Tenn.

May 29-June 9—Canadian International Trade Fair, Toronto, Ontario.

June 1-3—Annual convention, Southern Textile Association, Ocean Forest Hotel, Myrtle Beach, S. C.

June 2—49th annual "cruise" of Alumni Association, Philadelphia Textile Institute, Manufacturers' Golf & Country Club, Oreland, Montgomery County, Pa.

June 9-10—Annual outing, Southeastern Section, American Association of Textile Chemists and Colorists, Radium Springs, Georgia.

June 26-28 — New England Industrial Waste Conference, Massachusetts Institute of Technology, Cambridge, Mass.

June 26-30—53rd annual meeting of American Society for Testing Materials, Atlantic City, N. J.

August 7-19—First United States International Trade Fair, Navy Pier, International Amphitheatre, Coliseum, and Arena, Chicago, Ill.

Sept. 5-9—American Chemical Society, National Chemical Exposition, Coliseum, Chicago, Ill.

Sept. 11-13—Joint meeting, Southern Combed Yarn Spinners' Association and Spinner-Breeder Conference, El Paso, Texas.

Sept. 22-23 — Second Canadian Textile Seminar, Queen's University, Kingston, Ont., Canada.

Sept. 28-30—Annual convention, American Association of Textile Chemists and Colorists, Wentworth-by-the-Sea, Portsmouth, N. H.

Oct. 2-7—16th Southern Textile Exposition, Textile Hall, Greenville, S. C.

Oct. 11-21—International Exhibition of Knitting Machinery and Accessories, Granby Halls, Leicester, England.

Oct. 12-13—Annual meeting, North Carolina Cotton Manufacturers Association, Carolina Hotel, Pinehurst, N. C.

Oct. 26-27—Annual Convention, Carded Yarn Association, Carolina Hotel, Pinehurst, N. C.

Nov. 16-17—Annual meeting, Textile Research Institute, Waldorf-Astoria Hotel, New York, N. Y.

Nov. 26-Dec. 1—Annual meeting, Textile Division, American Society of Mechanical Engineers, Hotel Statler, New York, N. Y.

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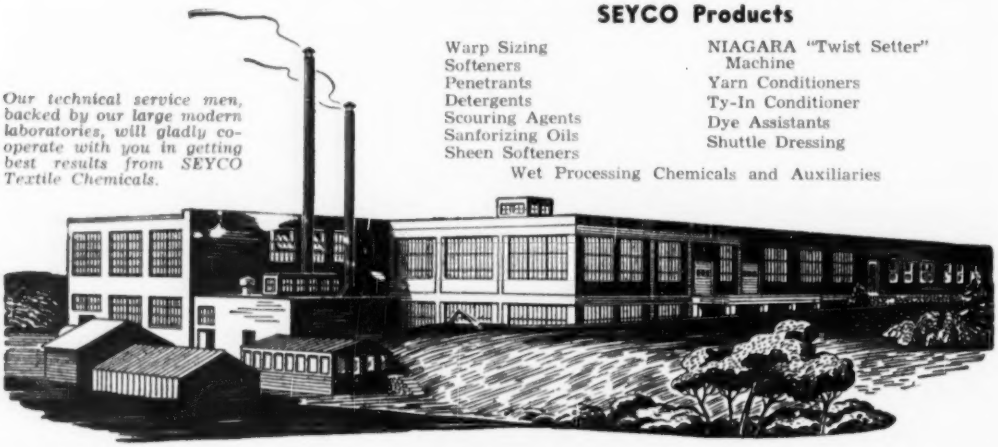

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No Time

". . . reason for not renewing subscription . . . under present circumstances have not had time to use the magazine . . . number of our supervisors are taking. . .

NAME WITHHELD

● Yes, we have our selling problems too. Exactly 13 years ago today we ran into another fellow who didn't renew.

Translate "Irrigated Cotton"

"With reference to the article 'Irrigated Cotton' . . . . page 104 November 1949 issue, we should be grateful . . . give us permission to translate it into Italian and reprint . . . article may prove of highest interest to our readers."

ISTITUTO COTONIERO ITALIANO
Milan, Italy

● Okeh by us. But we couldn't catch a typographical error.

Filling Conditioning Machine

" . . . . trying to locate ad sometime in 1946 or 1947 in connection with a chemical conditioning machine for filling yarn on bobbins . . . supposed to be a quick method of conditioning filling yarn for looms . . . help us identify the manufacturer."

PURCHASING AGENT

● Seydel-Woolley is guilty party. That "supposed" was said to be irrelevant.

"Gruesome" Renders Service

". . . read your editorial 'Gruesome Stories—but effective' in March . . . with great deal of interest and satisfaction . . . have rendered a real service to our industry in dealing so frankly and realistically with this problem of industrial safety . . . hope you will continue to stress this matter."

T. M. FORBES
Executive Vice-President
Cotton Mfrs. Assn. of Ga.

● Roger, Wilco!

Bactericides

"Where are fungicides and bactericides used in the textile industry and how? Are they used in the processing operation?"

NAME WITHHELD

● (1) Several places (details on request); (2) yes.

SHORTS and REMNANTS

Static and Alphatron

"We are having considerable difficulty with static conditions in the processing of staple nylon, and are therefore very much interested in the operation of your Alphatron described in the December issue of TEXTILE INDUSTRIES. Before sending you an order, we would like more information as to its application to 40" H & B cotton cards, drawing, roving frames, and spinning frames, all conventional cotton systems."

NAME WITHHELD

● Above letter was addressed to Gibbs Mfg. & Research Corp., care of TI; written by assistant general manager of large textile plant.

"Waste" Again

"Please send us seven copies of 'Waste Reduction and Control' reprinted from the October 1948, TEXTILE INDUSTRIES."

J. H. SANDERS
The Springs Cotton Mills
Chester, S. C.

● Manufacturing articles appearing in TI are valuable from year to year. Reprints available on this one from the editors or from Southeastern Engineering Company, West Point, Ga.

Back Issues

"With your December issue there was included an index of articles appearing during 1949 . . . certain articles interested in . . . at the time were not subscribers to your magazine."

BART E. BUSER
R. G. Buser Silk Corp.
Paterson, N. J.

● The Index appears with the December issue each year; subscribers who save all copies of the magazine find it valuable. Frequently we are unable to supply complete back issues, necessitating photostat methods to secure the technical information contained in TEXTILE INDUSTRIES.

Movie on Manufacturing

". . . one of our customers has asked me to get for him a sound movie film showing the various stages in manufacturing cotton yarn from the actual cotton growing in the field through the ginning and carding, slubbing, spinning, winding, etc."

NAME WITHHELD

● For those interested in visual aids, we refer you to the story in April TI.

More Information

". . . interested in reference to Wastemeter or Waste Control System quoted . . . February issue . . . possible to have more information describing system . . . and literature?"

COTONNIERE NOUVELLE ORLEANS
Gand, Belgium

● Data on the way before letter-opener got cold.

Knitter Hints for Australia

"We are very interested in the 'Knitter Hints' you publish each month, and were wondering if these are obtainable in booklet form."

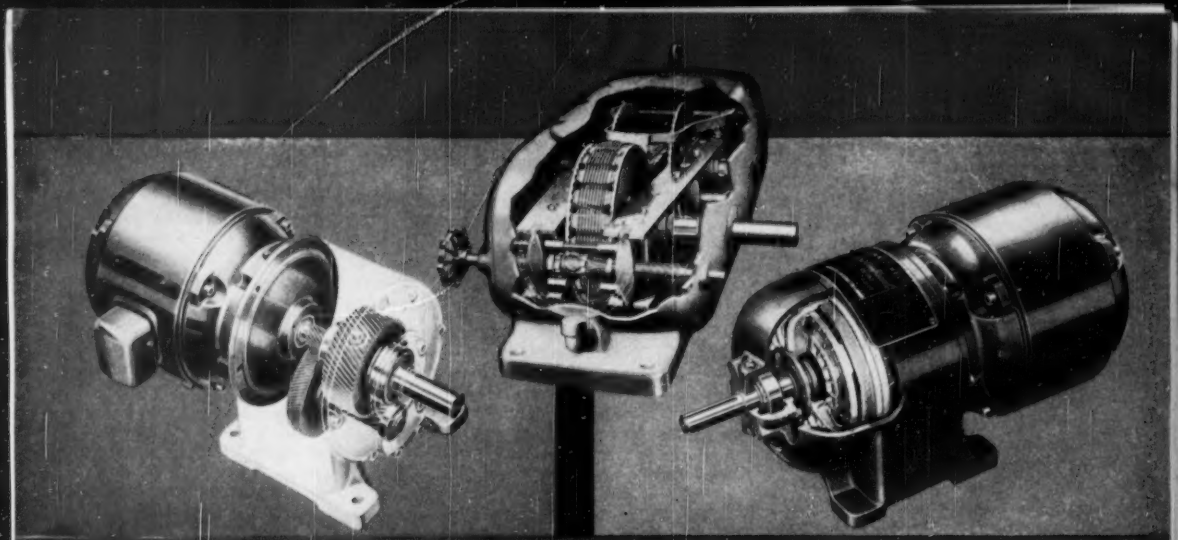
A. E. HAUSER
Holeproof Limited
Melbourne, Australia

● The series will continue. Sorry, the "hints" are not available except as they appear in the magazine. We have noted that many mills clip the pictures and post where all employees may get the benefits of the suggestions.

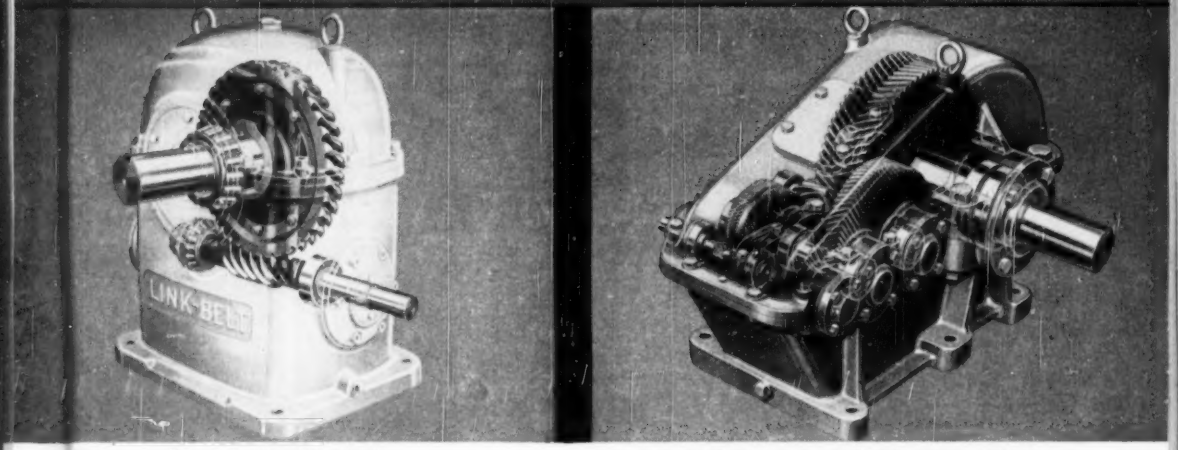
INDUSTRY AREA SURVEY

(See page 71)

Readers will be interested in following the series of Industry Area Survey reports, beginning in this issue. Important facts and trends will be brought to the attention of the industry. Comments are invited. (See page 71.)



A Right Drive For Any Problem



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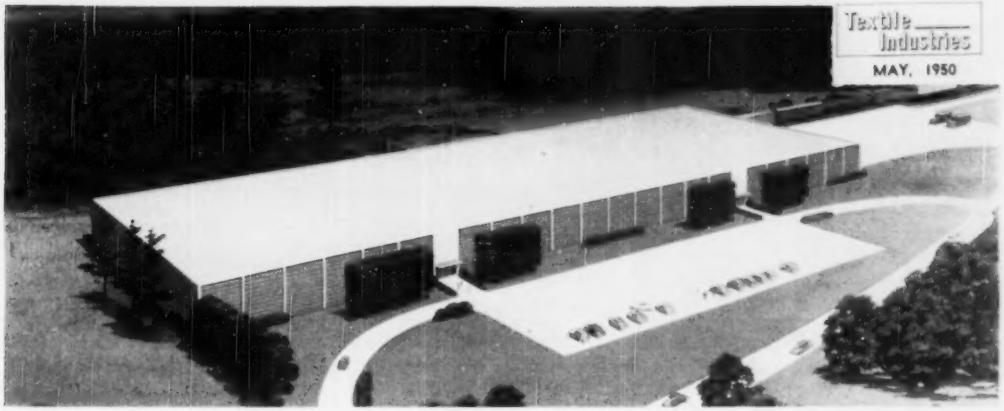


IT IS LESS COSTLY to plan from the inside out in designing new buildings or remodeling the old one to cover production equipment. Windowless construction was effectively employed in this worsted finishing plant which was completed recently at Pendleton, S. C.

Windowless Mill Construction

Provides more pleasant working conditions • reduces first cost and maintenance • improves product quality

By ROY PALMER
Duke Power Company
Charlotte, N. C.

EXCLUSIVE

SMART TEXTILE executives, architects, and engineers are planning and erecting better mill buildings than ever before. The trend to windowless buildings is resulting in lower operating cost, improved quality of product, reduced construction cost, and better working conditions. The development of air conditioning equipment and the application of high level lighting has had much to do with making these buildings practical.

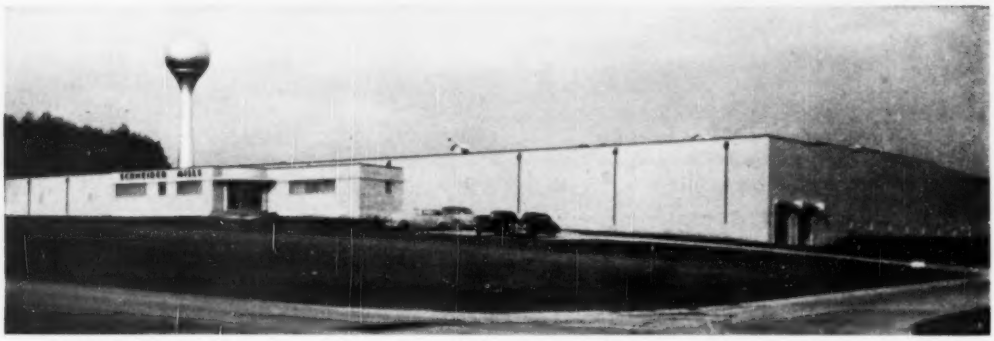
Many mill men have long realized that the elimination of windows would improve over-all plant operation, but hampered by tradition and the fear that employees might complain of claustrophobia, they hesitated to brick up windows in existing buildings or plan new structures without windows.

Experience has already proved that objections on the part of employees can be easily overcome. Certainly, most persons would rather work in clean, well lighted, controlled temperature rooms than in rooms dependent on windows for light and ventilation. Sanitary conditions in a windowless building are infinitely better than in a structure where dust and dirt are constantly brought into the rooms through windows. It should be obvious that clean, filtered air, frequently changed and controlled in temperature and humidity, is healthier and more pleasant than air circulated by ordinary ventilation.

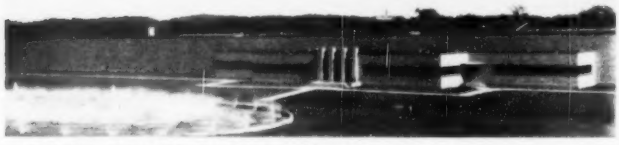
As for claustrophobia, one only has to be reminded that theaters, many restaurants, and most large commercial buildings are windowless, and few people, whether employees or the general public, complain of a "closed-in" feeling. Furthermore, crowding and cluttering of fixtures make conditions in these places more encouraging to claustrophobia than in a textile mill.

From the standpoint of the operative, more comfortable, pleasant and healthier working conditions result from windowless construction. These advantages make possible better work and improved volume without increased fatigue. Operatives on piece work are in a particularly favorable position.

Air Conditioning. Controlled humidity has long been recognized as a necessary adjunct in spinning and weaving in textile mills. To adequately control the moisture



RAYON DRESS GOODS are manufactured in this modern windowless structure located at Taylorsville, N. C.



RAYON TIRE CORD plant at Clemson, S. C., is one of several windowless plants in the Excelsior Mills group.

in the air, it is necessary to seal the room from outside influences. This makes the room oppressively hot in the summer months, so it is desirable to control the room temperature as well. With such controlled conditions, windows are not only unnecessary but actually undesirable.

A square foot of brick wall costs considerably less than a square foot of glass. Even more important, the lack of exposures through which heat is lost in winter means that a saving can be made on the first cost of the heating system and in its operation. Similarly, the capacity of the air conditioning system and its cost of operation are reduced. Engineers and architects who are alert to these facts design buildings to reflect heat in the summer and conserve it in winter.

Lighting. One of the prime purposes of windows is to bring daylight into the room. In the days before artificial lighting had been developed to its present stage, this was most important to mill production. At that time, however, demands on machinery and on the employee were not as exacting as they are today. Now, unit production cost must be watched with a critical eye; seconds must be reduced to a minimum; working conditions must be the best possible. To all of these, good illumination is extremely important.

The disadvantages of mill lighting through windows are many. The level of daylight falls off very rapidly as the distance from the windows is increased. Operatives in the middle of the room are handicapped in their seeing. Since light speeds sight, the operative is slowed in his operations and production suffers. Flaws are not easily seen, and seconds increase.

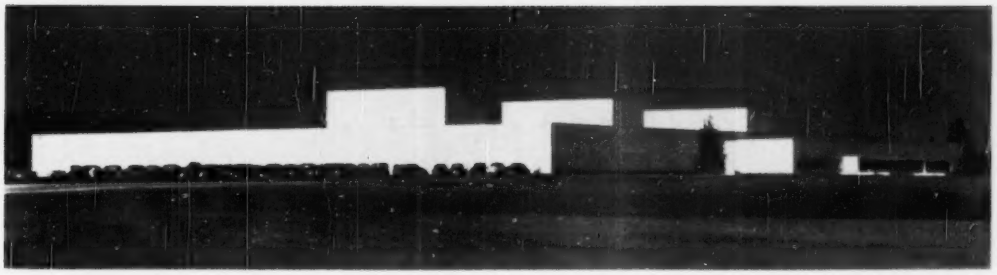
Sawtooth construction to provide light in the interior of large rooms is too costly today, both from the standpoint of first cost and of maintenance. Then, too, even if daylight distribution could satisfactorily and economically be accomplished, it would not be satisfactory on cloudy mornings or in late afternoons in winter. Where two shifts are working, a portion of each would require artificial lighting to supplement failing daylight. No matter how ideal natural conditions may be, daylight varies in intensity from hour to hour, and inspectors or others depending heavily on sight for good work must continually be adjusting to changing conditions.

Properly engineered modern lighting systems can provide high-level illumination uniformly throughout the entire work room. This not only permits the employee to see more easily, quicker, and more comfortably, but also creates a pleasant, cheerful atmosphere. A well lighted room also demands greater cleanliness, further contributing to good working conditions and higher quality of product. It is now fully appreciated that good lighting is a very necessary and important tool in the operation of any plant.

Almost all old textile mills and many new ones have hundreds of square feet of glass which have been painted because it has been found that the glare at certain times of the day is too severe for the employee's comfort. It is true that daylight must be controlled (as must artificial light) to guard against excessive brightness, but it is ridiculous as well as expensive to put in window areas for the express purpose of providing light only to block out 90 to 95 per cent of the light with paint.

Shades, venetian blinds, awnings, and similar means of controlling glare in a mill are costly to purchase, install, and maintain. Moreover, they require the time and attention of some employee to adjust them at various times of the day if they are to be effective. Many smart mill men, realizing these facts, have removed the mill windows and bricked them in.

Instead of constructing a new building according to precedents



WINDOWLESS buildings can be attractive as exhibited by this Gerrish Milliken mill in South Carolina.

established in the past and then adjusting machinery, air conditioning, heating, and lighting to the building, it is less costly to plan "from the inside out" and design the new building or remodel the old one to cover production equipment. Such a building can have an attractive appearance, and those responsible for its design have the satisfaction of knowing the money was well spent.

Chemical Test for Honeydew on Lint Cotton

A simple chemical test can be applied to cotton to detect the presence of honeydew, a sticky substance which causes trouble in processing, according to the U. S. Department of Agriculture.

Honeydew is the partially digested sap excreted by aphids, a form of lice which feed upon the cotton plant during its growth. It usually contains sugars and other carbohydrate materials. Scientists in the Bureau of Agricultural and Industrial Chemistry's Southern Regional Research Laboratory, in New Orleans, Louisiana, developed the procedure for applying the test to cotton.

A sample of cotton fiber is soaked in distilled water, and the water is then squeezed out and filtered. To this extract is added a small amount of alcholic alphanaphthol solution and a little sulfuric acid. A dark, wine red or purple color results if the cotton is contaminated with honeydew.

Cotton which does not contain honeydew gives a pale pink or pale violet color by this test. The intensity of the color is related to the amount of sugars present. Normal cotton generally contains less than 1/10 of one per cent of the sugars, while samples of honeydewed cotton have been found to contain several times as much.

Although the suggested test uses chemical reagents and requires care in its application, it can be used by persons with no chemical training or experience.

Copies of instructions for carrying out this test may be obtained, upon request from the Southern Regional Research Laboratory, 2100 Robert E. Lee Boulevard, New Orleans 19, Louisiana.

Pilot Plant for All Fibers at R. I. School of Design

A complete pilot plant capable of manufacturing yarns and fabrics from all fibers has recently been installed at the Rhode Island School of Design in Providence. Not only will it provide facilities for effective training of students in all phases of textile education but it will also afford an opportunity for the School to explore and evaluate new methods, new techniques, and new processes for handling textile fibers.

The plant was designed with flexibility of operations as a primary consideration. For example, the 8 x 4 x 7" Whitin roving frame is built in two sections, each one equipped with the Super-Draft system. The first section of 12 spindles has the standard roll sizes and cradles for running fibers from 1" to 2" in length. The second section of 16 spindles has larger rolls, wide stands, and long cradles for handling fibers up to 3" in length and is driven by independent gearing.

A 10 x 5 x 8" roving frame is also built in two sections but in this case the Inter-Draft system is employed. It is equipped with shell top rolls so that students can compare functioning of shell rolls on this frame with ball bearing top rolls on the Super-Draft frame.

Also of interest is a loom reported to be so flexible in design that it will weave cloth from all fibers.

Completion of the installation of this equipment at the School is the culmination of a four-year project of planning and design. Money to finance the $250,000 program came from the New England Textile Foundation, the Rayon Foundation Trust, and from a number of textile and machinery manufacturers.

Automatic Overhead Cleaning in Weaving Successful

THE BUILDING of the Avondale Mills, Pell City, Ala., is of saw-tooth construction. Inasmuch as automatic ceiling cleaners of the single-rail fan type had been used successfully for some time in both the carding and spinning departments, Harold Clark, superintendent, reasoned that the same principle might be applied in the weave room (denims), despite the high relative humidity.

(Overhead cleaning in a denim weave shed is a costly item because of the necessary frequency in doing the job; and for the most part this cleaning is a hand wipe-down operation.)

Staff Prepared

EXCLUSIVE

Accordingly, Mr. Clark installed for his own experimental purposes an American MonoRail standard ceiling cleaning fan, plus the necessary track to equip one bay in the weave shed.

Results. The accompanying photos made in Bay 2 (with overhead cleaner) and Bay 5 (without overhead cleaner) at periods of five, twelve, and 48 days show the results of the experiment in cleaning with overhead fans.

Although hand cleaning will still be necessary at times, the cleaning interval has been greatly extended when the fans are used.

Mr. Clark hopes that he will be able to install the equipment throughout the entire weave shed.

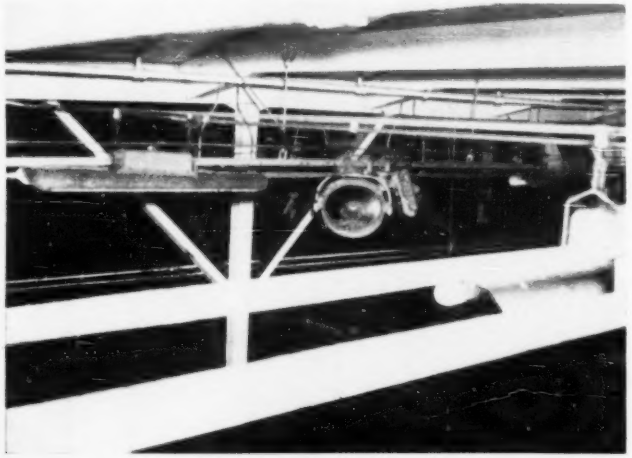
Additional Information. Fan. 20 in., 3-blade, propeller type.

Cycle. Four minutes.

Elevation. Underside of fan 9 ft above floor. Track 12 ft above floor. Crossbeams 14 ft 10 in. above floor. Lights are above fan.

Air Direction. 45 degrees to ceiling, changed alternately from port to starboard. (On experimental unit the port to starboard change is made by hand every four hours. Future installations will have automatic re-positioning for three directions.)

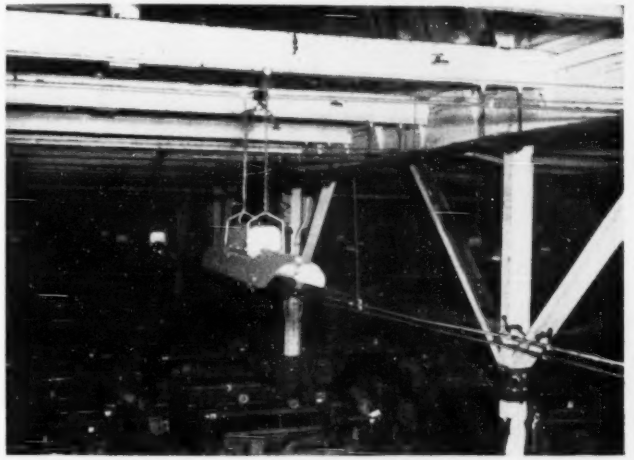
Bay 2 WITH Overhead Cleaner



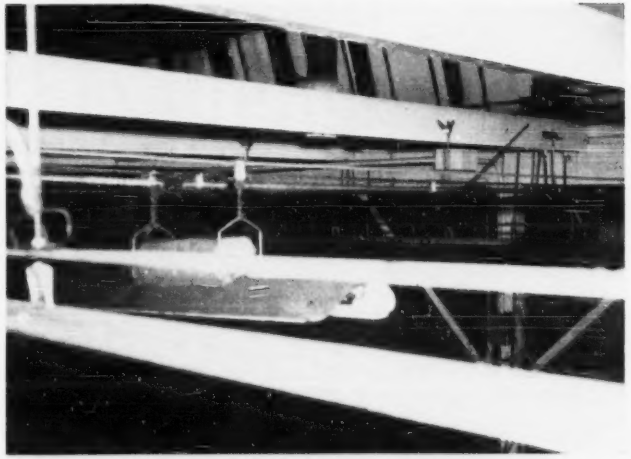
After 5 Days

(and no hand cleaning)

Bay 5 WITHOUT Overhead Cleaner



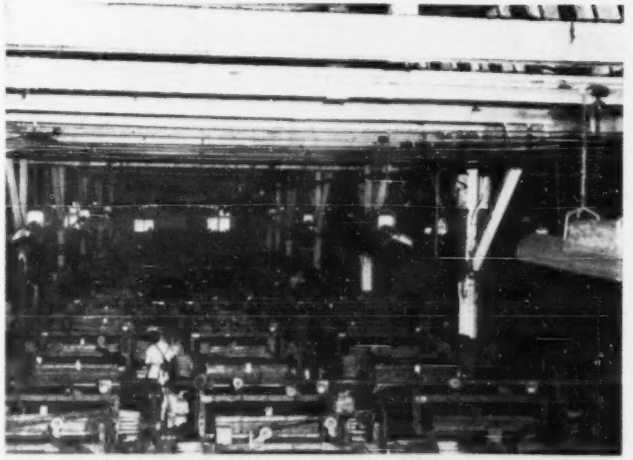
Bay 2 WITH Overhead Cleaner



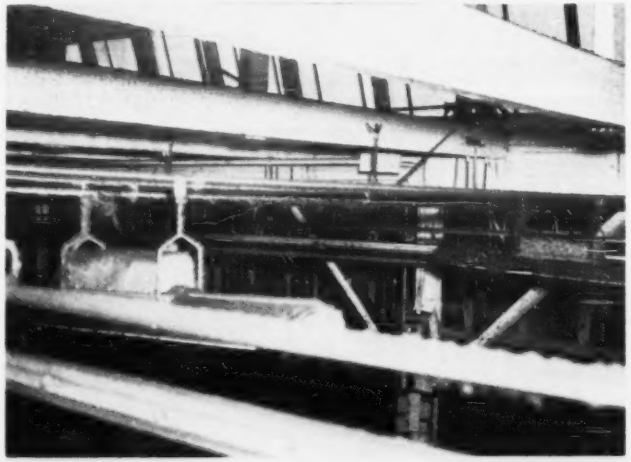
After 12 Days

(and no hand cleaning)

Bay 5 WITHOUT Overhead Cleaner



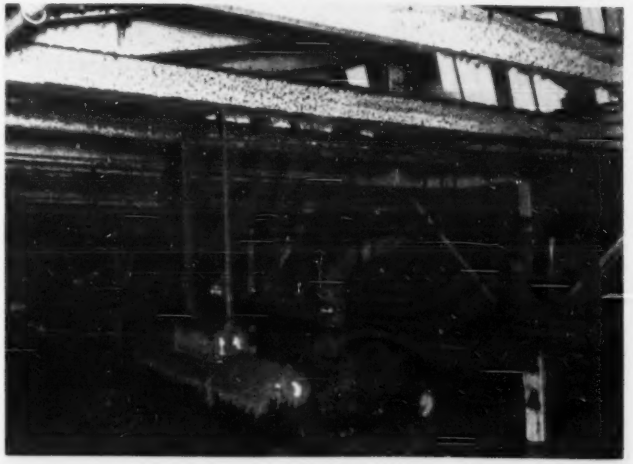
Bay 2 WITH Overhead Cleaner



After 48 Days

(and no hand cleaning)

Bay 5 WITHOUT Overhead Cleaner



Spinning Fur Blends

on the Cotton System

AN APPRECIABLY wide assortment of fur fiber blends can be spun in the average cotton system mill equipped for rayon yarn production. Although certain universal machine speeds and settings are advisable, the spinner is permitted a generous latitude of technique.

Revolving-flat and roller-top cards both have proved acceptable. Three, four, and five-roll drawing frames may be used. Conventional as well as long draft fly and spinning frames are perfectly adaptable to fur fiber blends. Opening, blending, and picking procedures have also been varied with equal success.

Exact manufacturing specifications would naturally depend on the type machinery in the yarn organization and the proportion of fur, rayon staple, or wool cut-top comprising the blend. However, mills of diverse spinning practices have manufactured fur blend yarns profitably. The arbitrary machine speeds and settings these mills used indicates the flexible nature of fur fiber spinning. It isn't confined to a rigid set of specifications, but there are some basic considerations not to be neglected.

Pre-Treated Fur. The condition of the fur stock preparatory to

Staff Prepared

EXCLUSIVE

opening or blending is of prime importance. The consensus of the mills is that the fur should be a "treated" type so as to minimize fly and reduce static interference. The crimp-free, short, smooth fur fiber should be modified to make it commercially spinnable.

The Blendlok process developed by Unique Fibers, Inc., is one of the treatments recommended. It is a physio-chemical method of improving fiber cohesion—the spinning factor of a fiber.

The probable behavior of fur fiber on cotton spinning machinery is quite predictable inasmuch as the fiber characteristics are well-known. Hairs vary in length from ½ in. for mink to 1¼ in. for raccoon. Muskrat, squirrel, wolf, opossum, and silver fox range between these limits.

The following is a tabulation of fiber diameter measured by micrometer eyepiece:

Fur fiber	10 to 12 microns
(guard hairs	16 to 18 microns)
1.5 denier rayon	15 "
3.0 denier rayon	20 "
5.5 denier rayon	27 "
80s quality wool	20 "
Cotton	10 to 25 "

Spinning Fur. Since untreated fur hasn't any of the natural twist or crimp of wool and its scale structure is twice as fine, the tendency is for untreated fur to drop out of the blend in progressive spinning stages. The fiber loss may be aggravated in carding and spinning, but with some precautions card waste and soft spinning waste may be remixed in the blend. If the card is equipped with a hopper, card fly and strippings can be reworked into the stock at the hopper. Fiber losses resulting from the use of untreated stock may nevertheless be economically prohibitive.

Treated or untreated, blended fur fibers are carried through the mill by the longer and stronger rayon staple. There is evidence that the fur component cores within roving and is therefore protected from excessive flying. Final spinning projects tips of the fur fibers, and at the same time rayon staple locks the fibers securely to the body of the yarn.

Tensile strength of the fur blend yarn is ascribed to the rayon content. Acetate imparts some strength, but not as much as does the viscose. The greater the percentage of viscose in the blend, the finer the counts possible. Counts as fine as 40s/1 have been pro-

duced, while even finer yarns have been spun experimentally. A 30s/1 yarn generally contains about 20 per cent fur.

Spinning limitations alone do not dictate the ultimate counts of yarn which may be produced. Knitting or weaving requirements (in addition to the demands of dressing, warping, and slashing) are the final determinants. A two-ply warp or a coarse count fur yarn warp will simplify the weaving operation. Static eliminators, temperature, and humidity controls are valuable for this blend in every phase of manufacture.

Preparatory Stages. Experience indicates that it is desirable to augment the guaranteed percentage of fur in the blend when laying up the mix to compensate for fiber losses which will occur during manufacture. About 3 to 5 per cent extra fur is sufficient for this purpose. In planning the blending operations, it is wise to bear in mind that the fewer stresses fur fiber is subjected to the better the quality of yarn ultimately produced.

Blendlok treated fiber is sometimes conditioned for better blending by opening. This may be accomplished on a Saco-Lowell W-3 waste machine. Without proper opening, lumps may appear in the picker lap, though carding has the effect of eliminating them entirely or at least distributing them uniformly through out the sliver. The chances are that unopened treated stock will yield an uneven yarn inferior in quality to yarn spun from opened stock.

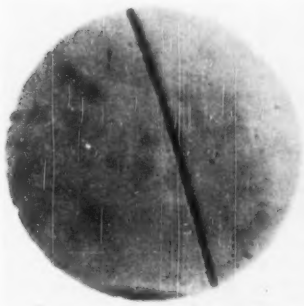
It is considered unnecessary to open untreated fur fiber, but this class of stock is responsible for improper mixing and excessive fly.

No changes from conventional speeds or settings used in rayon

TYPICAL FUR BLEND YARN CONSTRUCTIONS

COUNT	BLEND	%
30s/1	Fur	20
	3 denier dull acetate, 1⅝"	25
	1.5 denier bright viscose, 1⅝"	55
		100
20s/1	Fur	20
	60s wool cut-top, 1⅝"	15
	3 denier dull viscose, 1⅝"	30
	1.5 denier bright viscose, 1⅝"	35
		100
24s/1	Fur	20
	64s wool cut-top, 1⅞"	10
	1.5 denier bright viscose, 1⅞"	70
		100

Mink fur fiber



Mink hair fiber

Photomicrographs of Hair Fibers

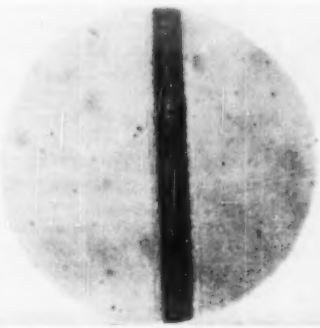
Original photographs were made at a magnification of 262.5. Reproductions are slightly enlarged.

The light source was a Bausch & Lomb spherical microscope lamp—no filters. A mount medium having a refractive index of 1.567 was used. This medium is roughly the same as the cortical layer, resulting in almost complete blocking out of the hair surface, although faint outlines of it can be seen here.

Courtesy, Unique Fibers, Inc.

Silver fox fur fiber

Silver fox hair fiber



Silver fox guard hair

picking are needed. The fur stock is blended in the hopper without oil or tint. Mills have put the blend in finishing pickers to avoid unnecessary mechanical processing. That served to make a rough blend, leaving the task of completing the blend to the card.

Carding. Carding is the most critical phase of the fur fiber spinning operation. Speeds and settings are sensitive, and these must be adjusted within close tolerances. The normal practice is to slow the cards down when starting the run and build up speeds gradually until the optimum performance is achieved. This will vary with condition of the card, its clothing, and the demands of the particular blend being processed.

Some mills advise reducing the speed of doffers on the flat-top cards to 5.5 rpm and the licker-in to 120 rpm. Better results are claimed on the roller-top cards where the web has been observed to be superior to a flat-top card web. Production is higher on the roller-top.

One of the principal difficulties encountered in carding is the more rapid pick-up of fur fiber by the main cylinder, with the result that in preliminary carding stages the proportion of fur to rayon in the blend is affected accordingly. After a reasonable running time the desired proportion is fairly well retained.

If the card is equipped with a Bramwell feed, strip waste can be added directly to the hopper. In this manner the breakdown of fur fibers experienced in picking is averted. Stripping intervals are usually more frequent than for straight rayon blends.

The use of a fancy is suggested as a means of preventing loading. Card screens and the front plate are set close. Closing in of the licker-in by insertion of a tin beneath it to block up all openings is advisable. A tin in front of the doffer to prevent collapse of the web will be of benefit. A relative humidity should be kept in the neighborhood of 50 to 55 per cent.

Drafting. Disregarding the few animal fibers which may go beyond the average length of rayon staple, roll settings in drawing, slubbing, and spinning are adjusted in accordance with the longest length fiber used. Machinery is operated as for any other rayon blend.

Some evidences of static may be observed in drawing. However, the incidence of static is no greater than that observed in routine rayon spinning. The same temperature and humidity maintained for rayon production is proper for fur blend spinning. Mills equipped with static eliminators will find these to be assets.

The fur fiber blend performs equally well on conventional or long draft fly frame systems. However, one mill states, "For the sake of better uniformity it is desirable to draft the yarn in gradual steps from the finisher drawing up to the spinning frame. This means that conventional spinning becomes the advocated procedure as against long draft slubbing."

Spindle speeds lower than 6000 rpm are given preference on the fine numbers. Ring size is based on the counts spun. A 1¾ in. ring will work well for 20s/1, while a 2¼ in. or even a 2½ in. ring will fit in the case of 6s/1.

Blends of this category require

(*Continued on page 190*)

TYPICAL FUR BLEND SPINNING ORGANIZATION

Breaker and Finisher Picker

No changes from conventional rayon staple picking procedures. Deliver 14 oz. laps.

Cards: Flat Top

Standard rpm of cylinder, licker-in, and flats. Fancy should be used. Weight delivered, 55 grain sliver.

Feed plate	.015
Mote knives (bottom)	.010
Mote knives (top)	.012
Licker-in to cylinder	.007
Back plate (bottom edge)	.024
Back plate (top)	.029
Licker-in screen to licker-in	⅛"
Screen to cylinder (near licker-in)	.022
Screen to cylinder (center screen stand)	.064
Screen to cylinder (front)	⅜"
Top flats	.010
Bottom front plate	.017
Top front plate	.022
Doffer to cylinder	.007
Comb to doffer	.012

Cards: Roller Top

Identical settings and speeds as for flat card are used with exception of workers and strippers. Metallic wire covered. Brammell feed.

Feed plate	.015
Licker-in	300 rpm
Workers	8 rpm
Doffer	7 rpm
Fancy	1600 rpm

Drawing

6 ends up. Weight delivered—60 grains. Two processes. Set rolls for the longest fiber of the blend.

8x4" Roving Frame

Regular draft aprons
Deliver 4 hank roving from 60 grain sliver
Twist per inch, 2
Spindle speed, 4,800 rpm
Front roll speed, 130 rpm
Back draft, 4
Front draft, 7.15

6x3" Spinning Frame

Worsted aprons
2/4 hank roving into 40s worsted count
Draft, 13.3
Twist per inch, 16
Spindle speed, 4,800 rpm
Front roll speed, 70 rpm
Ring diameter, 1⅞"

Wool Manufacturers' Annual Meet

Staff Report

MORE THAN 300 wool manufacturers attended the 85th annual meeting of the National Association of Wool Manufacturers held in April at the Waldorf-Astoria in New York City.

Pensions, research, and machinery developments were topics of three symposia held during the meeting.

Highlights of the industrial relations forum follow:

F. H. Williams, assistant secretary, Travelers Insurance Company: "When you deal with an insurance company, you are buying into a great portfolio of diversified investments. There is no gamble or risk."

Pensions, research, and machinery developments highlight program. Prince-Smith Centrifugal System for spinning and twisting described.

Roderick T. Clarke, secretary, F. C. Huyck and Company: "Workers resent compulsory retirement provisions, and desire insurance protection for their dependents. The majority of employees retired are more highly productive than their replacements."

J. Craig Smith, executive vice-president, Avondale Mills: "Profit sharing has more advantages than fixed pensions, particularly in a competitive industry which may not be able to realize its financial obligations during difficult times. The greatest stimulus that any of us have to greater effort is recognition, and the profit sharing plan recognizes the worker."

Colonel Millard D. Brown, president, Continental Mills: "Where the company and employees contribute to the pension, more interest in the prosperity and success of the enterprise is stimulated, and there is evidenced a lessened tendency for employees to leave the company and seek employment elsewhere."

Research Symposium

Dr. G. L. Royer, assistant director of Application Research Department, Calco Chemical Co., in his paper "The Application of Microscopy to the Study and Dyeing and Finishing of Textiles" told of the many possibilities in this field.

Robert D. Robinson, chief chemist of Bachmann-Uxbridge Worsted Corp., described a recently developed "simple and clean method of more evenly applying both tint and oil at the first Pin Drafter operation, assuring better fugitivity, longer pin life, less cleaning, less brush waste, less lapping on rolls and improved subsequent operations." [For a description of this Uxbridge Control-Spray, please refer to page 175.]

Walter J. Hamburger, Fabric Research Laboratories, Inc., presented a paper entitled "Deep in the Heart of Textiles" in which he pointed out that positive action in the form of sound application of research in science to the natural fiber area of the textile industry must result in the development of improved products designed to meet existing end use require-

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ments, new fields of application of natural fiber products, and new processes for the production and modification of natural fiber products.

Machinery Developments

Newport News Wool Card. William Rowedder of Newport News Shipbuilding & Dry Dock Co. described in detail the operation of this recently developed card, the basic design of which was taken from a Continental type machine. [For a complete description of this wool card which was designed and built in close cooperation with the Forstmann Woolen Co., see TEXTILE INDUSTRIES for September, 1949, page 167.]

"American System" for Spinning Worsteds. A review of the history of the development of the "American System" for spinning worsted yarns was given by R. J. McConnell, vice-president of Whitin Machine Works. An abstract of Mr. McConnell's remarks pertaining to latest machinery improvements follows:

We have always realized that the American System in its present form, because of its limitations with regard to length of fiber, was not the answer that manufacturers were seeking to the problem that is always present "to make better yarns and fabrics at lower cost."

The system has been confined to the finer wools which run closer to length of fiber required, and the spindles now in place must comprise quite a percentage of the spindles required in this field. To meet the demand for a more universal system, we have designed new drafting apparatus which is based on the double apron system principle of operation.

This new design will widen the field to take fibers up to 7" in length where the mean does not exceed 5".

Along with the mechanical developments we have been doing a great amount of research in connection with preparation and methods. Because of the reduction in the number of doublings and the increase in draft on the American System we have felt that it was of the utmost importance to set up standards to insure the production of yarns of acceptable quality.

In connection with this work we have found the Uster tester of great value.

The standards we have arrived at and their ratings are as follows:

Finished sliver for roving creel
Excellent - a variation of 12%
Good - a variation of 15%
Fair - a variation of 18%

Roving based on 120 grains for 40 yards
Excellent - a variation of 25%
Good - a variation of 35%
Fair - a variation of 40%

Spinning based on 30s
Excellent - a variation of 60%
Good - a variation of 75%
Fair - a variation of 90%

P. S. C. System of Spinning and Twisting. Of special interest to the wool manufacturers attending the machinery forum was the discussion by Harold V. Farnsworth, vice-president of Atkinson, Haserick & Co., concerning the operation, construction, and productivity of the P. S. C. (Prince-Smith Centrifugal) system [progress report on this development was published in TEXTILE INDUSTRIES for November, 1948, page 105] for spinning and twisting yarns. Excerpts from Mr. Farnsworth's paper are presented herewith:

P. S. C. machinery makes possible the centrifugal spinning of dried yarn.

The P. S. C. spinning frame is double-sided with 64 containers per side, or a total of 128 containers, which are either 3½ or 4⅛ inches diameter, depending upon the counts to be spun.

The traversing tube controls the build of the spun yarn within the container, and either a parallel wind or cop wind can be used, depending upon the setting of the lifter motion. The type of build on the inside of the container is reproduced when the yarn is rewound onto a paper or metal tube, to provide the actual finished package. The builder motion is automatically reset after each doff.

The drafting arrangement on the P. S. C. spinning frame is of the normal type known to all worsted spinners but the angle of the roller stand is set at 75 degrees.

The spinning of yarn into a container is comparatively simple. The ability to remove the dry spun yarn from the container in a usable form of package is one of the fundamental features of the P. S. C. system. The inverted type container which is open at the bottom and driven from above is employed.

The yarn being spun passes down a central traversing tube, and on leaving the nozzle end is wound by centrifugal force onto the inside of the container. If the path of the thread between the nozzle and the container side is intercepted, the thread already spun into the container is caused to unwind itself onto the intercepting medium.

By inserting an empty bobbin or tube up through the open end of the revolving container and intercepting the thread between the nozzle end and the yarn mass in the container, unwinding from the container to the bobbin is initiated. At the same instant the front roller delivery is stopped automatically by means of a clutch mechanism.

A front roller delivery speed of 2000 inches per minute has been found to be quite a satisfactory speed. For example, on 10½ counts with 5½ turns per inch a spindle speed of 12,000 revolutions per minute is entirely practical.

Summarized, the main advantages are:

(a) Higher speeds.
(b) Larger packages.
(c) Less end breakage.
(d) No piecing up labor.
(e) A stationary bobbin.
(f) Power driven and semi-automatic doffing.
(g) No ballooning, balloon drag or travelers.
(h) Less labor.
(i) Less floor space per pound of yarn produced.
(j) Will run through meal hours and overtime without attention.
(k) Will spin with a lighter drag and less twist.

Textile Industries *Presents a Special Feature —*

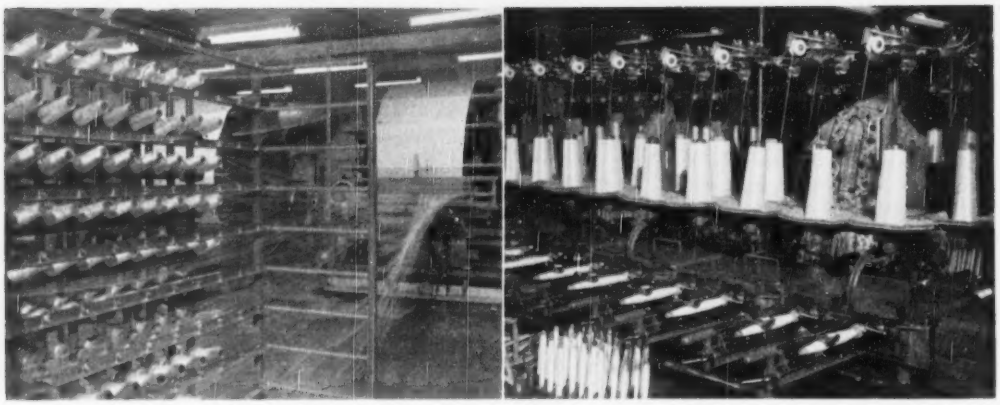
Manufacturing Glass Fabrics

By JAMES D. NORDAHL
Industrial Engineer
Coast Manufacturing & Supply Co.
Livermore, California

No longer is glass fabric a useless novelty. Because it is fire-proof, resistant to heat and sun, mildew- and insect-proof, neither shrinks nor stretches, and has an extremely long and durable life, great fields are open to producers and users of this "wonder fabric."

EXCLUSIVE

Please turn the page



WARPING AND QUILLING. Cones are mounted in the warper creel on sponge rubber to reduce vibration; yarn is smooth and has tendency to fall off the cones. In quilling, the yarn must be cut with scissors because of its strength; smoothness of yarn also gives it the tendency to slide off the full quill.

Manufacturing Glass Fabrics

By JAMES D. NORDAHL

Industrial Engineer
Coast Mfg. & Supply Co.
Livermore, Calif.

EXCLUSIVE

COAST Manufacturing and Supply Company, manufacturers of safety fuse since the gold mining days in California, became interested in the glass cloth field shortly after the end of World War II. Believing there was a firm basis for California's rapid growth in the industrial world and that there was a definite need for fabrics of this type in the West, the expansion program was launched.

A survey of the usable fields for glass cloth revealed that great quantities could be used if available. In the awning trade alone, hundreds of thousands of yards of material are used annually in California. With the constant exposure to the elements that awnings get in extremes of heat and cold, dryness and moisture, a fabric that is unaffected by these conditions and also fireproof, mildew-proof, etc., was bound to be a selling success.

Climatic Conditions Affect Fabrics. The San Francisco Bay area with its fog, wind, and salt air loses thousands of dollars yearly because of rapid deterioration of present materials. Prevailing conditions in Los Angeles with its industrial smog combined with the natural climatic elements is also hard on awnings, yet, shade from the sun's rays is essential. It was with certainty that these problems could be solved with glass fabric, that the weaving and processing was started.

GLASS FABRIC has become competitive. It is fireproof, mildew- and insect-proof, resistant to heat and sun, and neither shrinks nor stretches.

The possibility of being able to furnish the customer with custom designed cloth, made to his specifications, for his use, working hand in hand with the customers, was also thought to be a great working advantage. Being in a position to give convenient, prompt "back door," so to speak, service is also a greater aid to the customer and the producer, since the development of uses can be determined much sooner at a lower cost to the West Coast consumer.

Since glass cloth to be most usable requires further processing after the weaving, it was deemed advantageous to incorporate into the expansion a provision for

Glass Cloth is Competitive—But Not New

GLASS FABRIC auto tops, draperies, curtains, reinforced plastics, ironing board covers, tablecloths, and a number of other articles are already on the market, and the industrial field is wide open to hundreds yet-to-be-discovered uses, for this competitive textile—glass. Yes, glass yarn and glass cloth, long talked about as a dream possibility, has passed from the dream stage to the sphere of reality. Because it is fire-proof, resistant to heat and sun, mildew and insect proof, neither shrinks nor stretches, and has an extremely long and durable life, great fields are open to producers and users of the "wonder fabric."

History. Glass cloth is not new. The first was produced in the late eighteen hundreds, and some was shown at the Columbia Exposition in 1893. Unlike the product of today, the fabric of the eighties was in reality merely small bundles of comparatively large glass fibers bound together with silk thread.

This was truly a novelty fabric. Inflexible and heavy, the material was impractical, and as a textile, practically useless; nonetheless, it reportedly attracted much attention when people learned that, made into a dress, it was to be modeled by a beautiful actress at the exposition in Chicago. To other than the manufacturers, the fact that it was not transparent was probably its greatest disappointment.

Scientific research and experiment has changed the picture. No longer is glass fabric a useless novelty; great strides have been made in its manufacture, and within the past half dozen years the industry has catapulted into the competitive textile industry.

In the early 1930's, Games Slater developed the basic process for producing the glass fibers for the yarn.

The first large scale experiments, as would be expected in an undertaking of this nature, were long and costly. These early experiments did not immediately produce in economic quantities the desired filaments for yarn. Continued research and experiment finally led to the production by the present method, using platinum orfices with electrically controlled temperature of the desired filaments to be plied into the finished yarns.

Available Forms. The filaments are drawn in three different diameters averaging about 23, 28 and 38 ten thousandths of an inch. About one-eighth the diameter of a human hair, these are combined 204 to a strand for all but the lightest yarn. In the 900 series, there are but 102 filaments per strand. These strands are then plied to give a range of yarn for any normal type of weaving.

The appearance of the fine yarn and filaments is much like that of raw silk or natural rayon, but will not take a permanent set. Staple yarn, or yarn made by twisting and plying slivers of fine staple glass fibers, is also available from the suppliers for weaving. The finest continuous filament yarns contain approximately 88,000 yards per pound. The heavier yarn may contain as little as approximately 1600 yards or less per pound.

finish processing, making this unnecessary for the consumer.

Textile Precedents Discarded. Starting with a nucleus of trained men and adding those technical and professional men required in expansion, work was commenced. Because the mill site was far from the textile centers very little first-hand knowledge was available, and all concerned entered the project more or less in the dark. Little regard was shown for established, time honored, but oftentimes inefficient, methods of performing the numerous textile operations.

Initial Equipment. On the advice of the weaving superintendent, one of the few textile men employed and one of the few textile men familiar with glass weaving, some immediately available used equipment was purchased to be used as training equipment. Rather than bring in trained personnel, creating housing problems, large labor turnover, and similar problems, it was thought to be more advantageous to employ and train local help. Two old style C&K looms, one model 90 Universal quiller, and one 84-inch Sipp-Eastwood warper were the first pieces of equipment obtained.

With the one skilled fixer experienced in glass cloth set-up, and with the weaving superintendent teaching, a few local people started training for future fixers, warp hangers, weavers, quillers, etc.

While waiting delivery of 60 new Model XD Draper looms, 22 used Model XK Draper looms were purchased. This purchase enabled the training of more local people. By the middle of 1949, delivery and installation was completed on the XD looms, making a total of 84 looms. In the meantime, eight new Model 90 Universal quillers, and another new 84-inch Sipp-Eastwood warper were delivered and put into operation. Twenty of the 60 XD looms were leno equipped to enable the weaving of marquisettes which it is anticipated will constitute a large volume of the decorative glass fabric business.

The finishing department was progressing in equal strides with the purchase and installation of a batch type heat treating oven, a continuous type tower oven for use when coating and impregnating the cloth, and a smaller continuous type heat treating oven for the so called F-11 finish.

Warping. The decision was early made to use the 84-inch Sipp-Eastwood warpers in preference to using the section beam warping systems since many of the warps would be made up in less than 2,000 yard lengths, after which a new type warp might possibly, even probably, be put on the loom.

Two parallel creeling frames, accommodating 612 cones per frame, were constructed in the shop to be used in warping. The creeling frames were constructed mainly by welding of steel pipe, tubing, and angle iron into a semi-rigid unit. Casters were mounted to enable the frame to be moved sideways to line up with band being put on the warper.

The yarn is very smooth and has a tendency to fall off the cones; this required mounting of cones on sponge rubber bases and allowing sufficient spacing between cones to prevent loop tangles from ballooning.

The 612 cones were estimated to be sufficient to economically handle the variety of warps. In the light fabrics, it is often the case that the standard two-pound cone as received from the manufacturer will be set up and one or two 2,000-yard warps removed

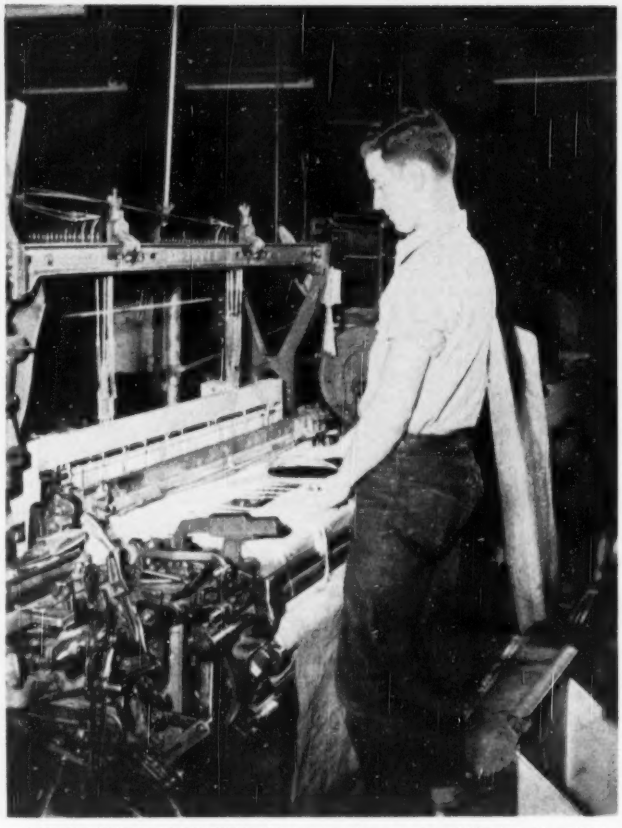
and then, rather than run off the half dozen or more warps that could be run off, the cones removed and repacked for later use. In cases of this type it is obvious that it is better to set up only 600 or less ends (¼ to 1/6 the total number needed to make a warp) than to try and expand the creel size and take up space to accommodate the thousands of cones. This procedure also reduces the required amount of yarn carried in inventory in any particular type yarn.

As the yards from a two-pound cone vary from less than 1,000 to more than 175,000, it means the warper must continually figure the most economical warp length to give the greatest number of standard cuts with the minimum amount of creel set-up work and a minimum sized semi-empty cone going to the quilling operators for quilling.

The warper cannot remove the yarn to the end of the cone because the cones vary in yardage length. The variance of yardage means that although it would be possible to put 2,000 yards of the yarn on the loom beam, this cannot be done because the yardage on the cones might average only 1440 yards. The problem is that although the average is 1440 yards, some cones will have only —say 1300 yards. The warper then must make a warp length of approximately 1250 yards for five standard 250-yard cuts.

If it were practical to make splices, the full 1440 yards might be used; however, it is more practical to simply send the semi-empty cones not used to the quillers. Standard warp lengths, based on experience, soon serve as a satisfactory guide.

The continuous filament yarn is inherently nearly lint free. Hence, there is little difficulty with clogged reeds, faulty tension discs, and other lint created problems. This greatly simplifies the air conditioning and cleaning problems. There are no health problems in weaving continuous filament glass fibers, for it is one of the most dust and lint-free fibers known. Mill conditions are pleasant.



TYING WARP IN LOOM. The warp hanger carefully brushes the warp to secure correct tension for each thread, one of the most important factors in glass weaving. Ties are made to the apron from the center out to each side.

Humidification. Glass yarn does not require the careful humidity control that weaving with cotton, wools, and other natural fibers require. It was first thought that no humidity control would be necessary—but to keep the mechanical operation of the looms at constant efficiency with fewer adjustments, a simple humidifier was installed for the hot, dry summer days.

Entering (Drawing - In). The finished beams are handled by a combination monorail system and special beam trucks designed to accomplish easy placement and availability at the entering frames and later at the looms.

Because of the aforementioned difficulty of tying knots in the yarn, it becomes necessary to enter each warp by hand, rather than utilize the present warp tying machines. Tying is not successful because the yarn is abrasive on itself and is so nearly elastic that a knot tied will spring loose if the tension is relaxed.

Special entering frames were fabricated in the shop to make the job as non-fatiguing as possible. The drop wire frames (if of the solid type) are placed near enough to the heddle frames that the operator may enter through the drop wires and the heddles in one operation.

The reeds are entered after entering the heddles and this is done on the same frame. When 12 or more harnesses are required, it becomes impractical to enter

through the drop wires and heddles in one operation. In this case, two operators work together, one in back of the frame to select ends, separate drop wires, and assist the enterer; and one operator in front to enter the yarn. An attempt is made to use split drop wires in the case of 12 or more harnesses so that entering is not done through the drop wire on the entering frame but instead, drop wires are put in at the loom.

Weaving. The entered beams are positioned in front of the loom on the beam trucks. The conventional method of placing the beams in the looms could not be followed as the method of lifting the beam by supporting it while resting on the yarn itself would damage the yarn. There were no ceiling beams, nor could they be easily installed for monorail systems in that part of the building, so the engineering department came up with the answer in a special beam dolly. This was welded into shape, utilizing two hydraulic automobile jacks to lift and support the beam on beam blocks located on the flanges at either end and hence, lifting it into position.

Weaving the glass cloth naturally calls for certain changes from normal weaving methods and procedures. The yarn does not stretch, is very smooth and slippery, is somewhat abrasive on itself and moving parts with which it comes in contact, and is more difficult to cut than most yarns. The solution to these problems and others, required considerable research and experimenting.

Extremely good warps and beamed with even tension must be made since the unevenness cannot be taken up by stretch as is done in other yarns. However, some unevenness is taken up by crimp in the yarn when woven and processed. Close attention is paid to developing near-perfect warps.

Leases put in at every cut length aid in making adjustments to compensate for some of the smaller irregularities. The cross beams on the warpers had to be planed down so each bar was perfectly parallel with the others, for any warped cross bars caused differences in yarn length and made baggy cloth.

Life of Parts. The abrasive factor in weaving takes its toll in rapid wear of shuttles and other parts in friction with the yarn. The development of the phenolic impregnated and compressed wood shuttles aid greatly in extending the life of the shuttle. Shuttle dressings do not reduce wear when glass fabrics are woven. Cleanliness in weaving is stressed because the finished cloth does not get the scouring usually given other fabrics to cleanse them of oils, greases, and dirt.

In making the splices with splicing fluid, operatives are cautioned to have their hands free of oils and grease. If iron is present in oil or grease, as it easily could be when around machines where there is wear, the further heat treatments given the cloth turn this to iron oxide, leaving a dirty rust-colored streak where the splice was made. (Splices are made when the end breaks out. If the end is lost then a new end is brought in without splicing. When a splice is made, methacrylate splicing fluid is used. A simple overlay of from two to four inches is made, with the ends sealed down carefully. This is a simple gluing operation performed by the weaver without the aid of splicing tools or equipment.) The streaks are not too objectionable in industrial cloth, but in decorative fabrics they are cause for rejects. Any marks made by a weaver's pick stick, or hand marks, etc.—even though not dirty—show up quite distinctly in later processing. These things all point to the fact that the work of the weavers must be of the highest caliber.

The loom efficiency on the various fabrics is about the same (85%).

Warp Hanging. The warp hanger has the very difficult task of starting the warp with the correct warp tension. This is accomplished by tying to the apron small groups of ends and giving each group the correct, even tension by constant brushing and careful handling. This helps prevent bagginess and rejected cloth. Even tension without bagginess is very important, since many users of the glass cloth coat the fabric with resins, rubber, or other compounds.

In their coating applications, bagginess creates creases, wrinkles, and uneven coating material application which are causes for rejection of their products.

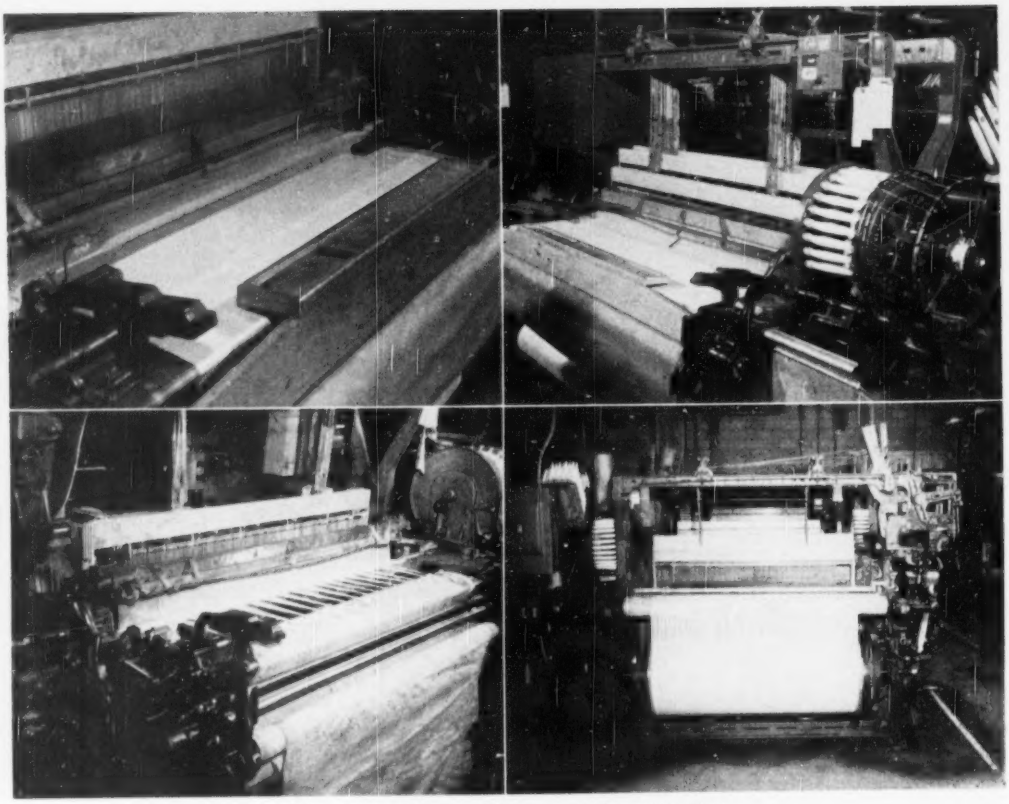
The skill involved in getting correct warp tension is probably the most distinctive difference of the warp hanging from that of handling other textile yarns.

Quilling. The operation of quilling is much the same as in any other type mill, with a few exceptions. Because the yarn is extremely strong, it is necessary for the quill girls to cut the thread with scissors rather than break it or cut it with knives. The tendency in quilling is for the yarn to slide off the full quill and try to unwind.

Quill boards were made to mount the quills; they provide neatness and easy access, thus saving time and material by minimizing tangled ends and the tendency of the yarn to slide off. The quill boards are mounted on the looms with a supply of 48 quills per board, brought to the looms on a specially devised truck to handle 40 quill boards, thus reducing time and energy otherwise consumed by the battery girls walking to and fro.

Inspecting. When a standard length of cloth has been woven, cuts are made and taken to the inspection department for initial examination. One hundred per cent inspection is given all the cloth received from the weave shed, to establish uniform quality. The inspection is a combination of police inspection and preventive inspection. The inspectors inform the weaving department immediately in any case where the cause of the defect can be remedied by a change in the looms, quiller, or warper.

The inspection department gives an accurate report of the quality of cloth produced by each loom and each weaver. A copy of the inspection report is attached to the loom to give the weaver a re-



Four views of looms which are weaving glass cloth.

port on quality produced. Placing the reports where they can be seen and compared tends to cause the operators to produce better quality cloth rather than be outdone by fellow weavers. Because good quality cloth is usually indicative of good loom efficiency, this serves a double purpose.

Versatile Operators. In all phases of the manufacture of glass cloth, more than average versatility is demanded of the employees. It is not uncommon to be weaving as many as 20 different types and widths of cloth at any one time in the mill. This means that the warper must be able to handle a variety of warps and the weaver must recognize a variety of weaves, construction, and yarns.

Inspecting. The inspection department must check all patterns, constructions, and yarns against standards to eliminate any mixing of fabrics for treating or shipment (not only must the inspection department recognize the weaves and patterns, but also a variety of finishes given the numerous types of cloth). The machines used are three 60-inch heavy duty, progressive inspection machines adapted by the shop for inspecting glass cloth. Another inspection machine designed by the engineering department to handle the slippery, satin weave material, uses a combination center and surface drive.

Although it might be assumed that the inspection of all cloth would be the same, regardless of the kind of yarn from which it is woven, this is not true. Rather than use the conventional black, board table as a backing, it was discovered that more defects could be detected by having illumination come from behind the cloth rather than thrown on the surface of the cloth. This gives the customer a truer record of the quality received and provides a closer check on the quality of production achieved by the weave shed.

To obtain background illumination, banks of fluorescent tubes were mounted under frosted glass and a glare filter. This made it easy to detect defects such as mispicks, filling loops, tight picks, filling pull-ins, set marks, mixed yarn, and soiled spots on the under side of the cloth which were practically impossible to see before.

Light cast from above on the white cloth tended to cause glare and eye fatigue, a factor largely overcome through illumination from below because the light is diffused by the filters. This type of lighting resulted in increased production and made possible more efficient and complete inspection. An added feature was

eliminating the need for two sided inspection (glass cloth is two sided without face or back and would normally require inspection on both sides). Now, even smudge marks from handprints, filling loops on the backside, and other defects can be detected with background illumination.

Trimming. A decided problem in inspection is the clipping of the filling ends left when the quills change. The clipper on the temple frame is set as close to the cloth as possible, but one inch or more of the yarn remains. This must be removed for most glass cloth uses, especially in coated goods for if the filling ends bend over the edge and get under the doctor blades, it makes a thick material coating the width of the cloth in that spot. Several methods for clipping the ends have been tried with only partial success. At present, the removal is by hand as inspected. A saving of as much as 25 per cent of the inspection time can be realized if the problem can be adequately solved.

The extreme slipperiness of the satin weaves caused difficulty in winding on inspection machines with center drive and was not greatly improved with surface wind or a combination of both. The selvages building up on either side caused thicker places in the roll that tended to equalize by telescoping the ends of the roll. Weaving of selvageless cloth and using careful guiding tends to overcome this difficulty.

Care must be used in handling grey goods in the roll form to keep them from telescoping. The shipping packages must be designed to overcome the "slipping" tendency in order to supply the customer with a neat roll. With varying roll size, weight, and length, this is a packing problem in itself.

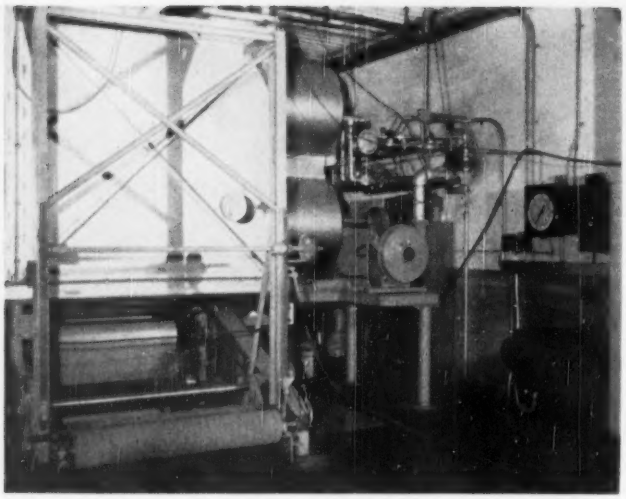
Finishing. The finish given glass cloth depends upon the use to which the material will be put. Made into auto tops, it is an ideal fabric as there is no stretch or sagging and consequently, self wear; it is mildewproof, rotproof, fireproof, and extremely strong. As an upholstery fabric, it is exceptionally well suited for lawn furniture; it is used for laminated reinforced plastic sheets in air craft where a high strength to weight ratio is desired (glass laminates can be made with a higher strength to weight ratio than aluminum or stainless steel), awning material, ironing board covers, luggage, small boat hulls and coverings, and other uses too numerous to mention here.

INSPECTING. Lights are under frosted glass to permit inspection of both sides of fabric at same time. Aprons are worn by inspectors to prevent soiling the fabric.

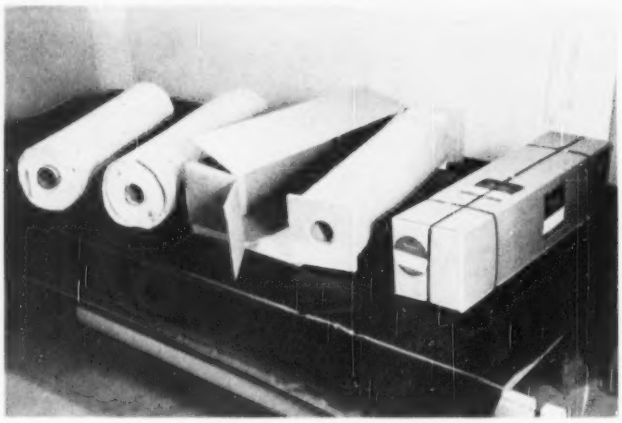
The decorative field when fully developed will lead toward a full line of marquisette curtains, casement fabrics, table cloths, draperies, and other products offering advantages not found in other materials.

One finish given the cloth to prepare it for the foregoing uses is heat treatment, designed to remove part or all of the lubricating binder put on the fibers as they are drawn when manufactured, giving better characteristics for use. One finish, designated as F-11 involves heat treating to remove part of the binder; it gives a good adhering surface for plastic or resinous coatings. The original lubricant is partially removed or "caramelized" to give the cloth a rich caramel color. The better adhesion of plastics produced by this process creates laminates which have a very good dry strength. Fabrics with this treatment are usually used to fabricate high pressure laminated panels.

In some cases where a high wet strength is required or where the caramel color is not desired, the cloth is further heat-cleaned, taking the original lubricant beyond the caramelizing stage until almost



HEAT CLEANING is carried out in this gas-fired oven. This is a continuous processing machine.



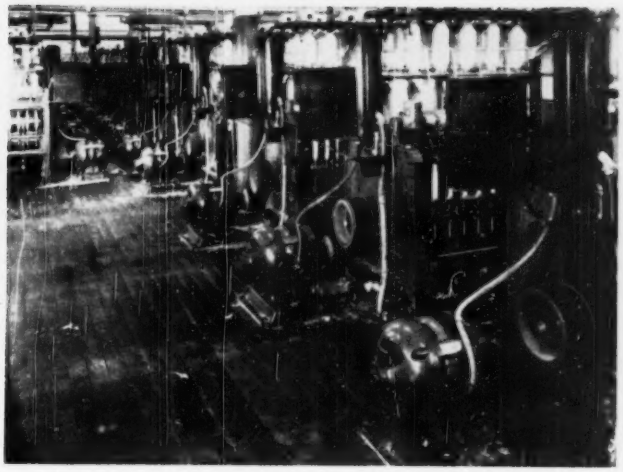
PACKAGING FOR SHIPMENT. Rolls of fabric must be carefully prepared for shipment or they may telescope in transit. This view shows progressively from left to right (1) cloth on paper tube core, (2) cloth wrapped in heavy paper, (3) carton, (4) wooden end block to suspend roll in box and prevent shifting of cloth endwise, and (5) the finished carton ready for shipment.

pure glass fibers remain. This treatment leaves the cloth snow white. The cloth is not strong in this condition, however, as it causes glass yarn to be against glass yarn, and the abrasion causes weakness and breakage. Therefore, the cloth is then given a uniform coating of chrome-complex which retains the high strength in humid conditions or exposure to the elements. This gives a good bonding surface for the polyesters.

Some resin impregnating is done by Coast Manufacturing and Supply Company, although much cloth is sold in only the heat-treated stages. It is anticipated that coatings and impregnating will be done on a large scale in the near future.

The surface of the decorative field has hardly been scratched due to technical problems that have not yet been solved. The decorative fabrics require much the same processing with additional treating to give them the desired hand and color. Marquisette curtain material with the desired hand, color fastness, and appearance is being produced. Draperies and casements are fast developing with a variety of colors and weaves. Work is being done continually toward the development of fabrics for these needs.

The future of glass cloth is very bright, with new uses being discovered by the users in all fields of industry; indeed it will not be long before glass, the common substance so useful now, may gain new luster in the field of woven fabrics.



Spinning frame drive motors equipped with capacitors (on frame).

Capacitors Cut Power Bills

Staff Prepared

The installation of capacitors for correction of power factor in textile mills can mean a reduced power bill and better electrical service.

Photos courtesy, Westinghouse Electric Corp.

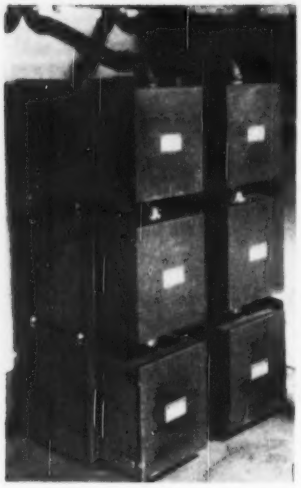
THE INSTALLATION of capacitors in textile mills for power factor correction would save much in power bills each month and would assure better service through improved voltage and fewer electrical losses. It is not necessary to understand the design and operation of a capacitor or even the meaning of power factor to participate in the benefits offered. Any man with one good eye can see stars through a telescope without understanding the science of optics or the construction of the glass.

Textile mills use more small a-c motors than any other single industry in this country, and it is the small a-c motor that is the principal cause of low power factor in the mill. These motors use two kinds of current; one is active power, and the other is reactive or wattless power. As the name implies, the active power does the work. It is measured in watts, or kilowatts, and the wattmeter used to measure the power used each month measures only this active power.

However, it costs the utility supplying the mill to furnish wattless power just as it does to furnish active power. If a mill were to use 100,000 kwh a month, and at the same time use 100,000 units of wattless power, the power company would find themselves furnishing considerably more current than they were being paid for. With electric rates throughout the country as low as they are, no public utility could serve such a customer except at a great financial loss. Actually, a mill using 100,000 kwh of power and an equal quantity of wattless current is not too extreme a case. Such a mill would be said to have a power factor about 70%. Unfortunately, mills with power factors as low as 60% are not uncommon, and the average is probably about 75%. An ideal condition exists where no wattless power is required, thus the power factor is 100%, or unity.

Recognizing that they cannot serve low power factor loads at regular rates, all utilities have encouraged their customers to improve their power factor and bring it as close to unity as possible. The methods used to encourage improved power factor have varied, but no utility has failed to try.

Capacitors. There are several ways in which power factor may be improved. Until a few years ago, the standard method was to install a synchronous motor. When that type of motor is put on the circuit, it can be adjusted to balance the poor power factor of the a-c induction motors and bring the power factor very close to unity, so that the system as a whole uses little or no wattless power. Synchronous motors are still used occasionally for power factor correction, but they have a



BATTERY of capacitors mounted in a corner present a compact and neat appearance, require little space, and more than pay for themselves in terms of reduced power bills and better electrical service.

number of disadvantages. They are economical only when large in size, and in order to do the job of power factor correction properly, they should be tended by skilled men. For these and other economic and mechanical reasons, they have been superseded in most industrial plants by capacitors.

A capacitor is an electrical condenser which supplies wattless current to the plant circuit. When capacitors are installed on a line operating with poor power factor, the power factor is improved, and if just the right amount of capacitance is installed, the power factor can be brought close to unity.

Capacitors are accepted as the best way to improve power factor in most industries, and they are certainly the best for the textile mill. They are relatively inexpensive, they do not take up much space, and they require practically no maintenance because they have no moving parts.

Advantages Offered. It is easy to see that it would be a good thing for the power companies if all mills installed capacitors and brought their power factors up to somewhere near unity. It must be admitted, however, that there are few mills who would freely spend several thousand or even several hundred dollars if the expenditure were to benefit the power company only. By what means do the power companies expect to encourage the installation of capacitors?

Two major encouragements are offered. The first, which is used by all utilities, is through an explanation of the benefits to the mill. When wattless current is drawn through transformers and lines, it brings about a voltage drop. This means that full voltage is not reaching the motors or the lights or other electrical apparatus in the plant. Low voltage shows up in the overheating of motors, which in extreme cases can result in burned out motors and expensive replacements. No electrical equipment operates efficiently if the voltage falls as much as 10% below normal. In older plants which have inadequate wiring, it is easily possible for the power company to show that it would pay the mill to install capacitors to avoid line losses and excessive voltage drop.

Another method used by many public utilities to encourage the installation of capacitors is much more direct and generally more effective. These companies take power factor into consideration in setting up their rates, and large savings in billings are possible if the power factor is held high. The savings offered by some utilities for maintenance of high power factor are not small by any means.

It is interesting to note in Table I, the savings offered by some of the power companies in textile areas, or the savings of a mill operating two, 40-hour shifts per week with a billing of 100,000 kwh per month, if power factor is improved from 60% to 90%. In several instances, the power factor would only have to be brought to 80% or 85% to effect this whole saving each month.

These utilities, having a power factor clause in their rate structure, offer a reduction of $24 to $151. Shown as a percentage of the total bill, this savings repre-

TABLE I

Monthly savings resulting from improvement in power factor from 60% to 90% for a mill using 100,000 kwh per month, and operating on two, 40-hour shifts.

Pennsylvania Electric Co.	$24.
Central New York Power Corp.	$61.
Houston Lighting & Power Co.	$151.
Central Power & Light Co.*	$141.
Buffalo Niagara Electric Corp.	$62.
Tennessee Valley Authority Distrib.**	$120.
Public Service Co. of N. H.*	$90.
New York Power & Light Corp.	$62.
Virginia Electric & Power Co.	$24.
Jersey Central Power & Light Co.	$37.
Carolina Power & Light Co.*	$36.
The Potomac Edison Co.	$98.

* Same saving would apply if power factor were raised to anything over 80%.

** Same saving would apply if power factor were raised to anything over 85%.

The savings indicated above have no relation to the total amount of the power bill in that different utilities have different rates based on different factors. These figures indicate the savings offered by these companies *for power factor correction.*

TABLE 2

POWER-FACTOR CORRECTION

Table Values x kw load = kva of capacitors needed to correct from existing to desired power factor.

Existing Power Factor %	Corrected Power Factor 100%	95%	90%	85%	80%	75%
50	1.732	1.603	1.247	1.112	0.982	0.850
52	1.643	1.314	1.158	1.023	0.893	0.761
54	1.558	1.229	1.073	0.938	0.808	0.676
55	1.518	1.189	1.033	0.898	0.768	0.636
56	1.479	1.150	0.994	0.859	0.729	0.597
58	1.404	1.075	0.919	0.784	0.654	0.522
60	1.333	1.004	0.848	0.713	0.583	0.451
62	1.265	0.936	0.780	0.645	0.515	0.383
64	1.201	0.872	0.716	0.581	0.451	0.319
65	1.168	0.839	0.683	0.548	0.418	0.286
66	1.139	0.810	0.654	0.519	0.389	0.257
68	1.078	0.749	0.593	0.458	0.328	0.196
70	1.020	0.691	0.535	0.400	0.270	0.138
72	0.964	0.635	0.479	0.344	0.214	0.082
74	0.909	0.580	0.424	0.289	0.159	0.027
75	0.882	0.553	0.397	0.262	0.132	
76	0.855	0.526	0.370	0.235	0.105	
78	0.802	0.473	0.317	0.182	0.052	
80	0.750	0.421	0.265	0.130		
82	0.698	0.369	0.213	0.078		
84	0.646	0.317	0.161			
85	0.620	0.291	0.135			
86	0.594	0.265	0.109			
88	0.540	0.211	0.055			
90	0.485	0.156				
92	0.426	0.097				
94	0.363	0.034				
95	0.329					

Example:
With a load of 500 kw at 70% power factor, it is desired to find the kva of capacitors required to correct the power factor to 85%. From the table select the multiplying factor 0.400 corresponding to the existing 70%, and the corrected 85% power factor. 0.400 x 500 = 200 kva of capacitors required.

sents anywhere from 2% to as much as 14% of the monthly bill. This shows how much the power companies are willing to offer the mills with good power factors. Under some utility rate structures, it is possible to save enough in power cost in a very few months to pay the full cost of capacitor installations. Where utilities do not offer any direct rate improvement for high power factor, they usually require that their customers maintain a certain power factor or have the rate structure changed so that it is based on 80% or 85% of their kva instead of their kw demand. This, in effect, is the same as including a penalty for low power factor, for kva demand includes the demand for wattless power, and the customer with a low power factor must either raise the power factor or notice an immediate increase in his power bill.

On the other hand, there are still a few utilities who have nothing in their rate structure to encourage high power factor, and in these instances they depend largely upon selling the customer on advantages to him within his own mill. This latter group of utilities are in the minority at present, and most of them are considering changes in their rates to enable them to put more pressure on reluctant customers.

SUSPENDED from the ceiling, capacitors require little usable space. In operation, this 60 kva, 460-volt enclosed capacitor is connected automatically by a voltage operated relay.

Still another idea has been used for a number of years by the Hartford Electric Light Co. They have agreed to underwrite 50% of the cost of capacitor units required and the customer pays his share plus the cost of installation.

Capacitor Costs. In a textile mill running 40 hr per week on two shifts and using 100,000 kwh per month, the cost of capacitors to raise the power factor from 60% to 90% would be about $2,500. If the savings offered by the power company rate amounted to $65 per month on the power bill, it would take slightly over three years to pay for the installation out of power bill reductions alone. However, it must be remembered that there are other inducements which can make capacitors a wise investment.

Capacitors can increase the voltage at points of low voltage, reduce the current through feeders, transformers, and other equipment, reduce feeder and equipment losses resulting from reduced current, and permit ready starting of motors for which there was insufficient starting current available. By reducing the current flow in feeders and transformers, it is frequently possible to reduce or eliminate the overload on existing equipment and permit its continued use.

It is a simple matter to figure the actual cost of capacitors for the mill. Total cost, including installation, usually comes to about $10 per kvar, this kvar being the unit in which capacitors are measured. The number of kvar needed to raise the plant's power factor from its current figure to the desired figure may be determined from Table II. The figure shown in the table is merely multiplied by the mill's power load (which can be secured from the power company) and this will be the kvar of capacitance needed. This figure, multiplied by $10, will give approximately the cost of the capacitors, plus the cost of installation.

Mill Investigation. Although a number of mills have, in the past few years, installed capacitors and have noted large and agreeable savings as a result, capacitors are still rarely used in the textile industry. It would be wise for every mill engineer to call his local power company and ask about his power factor, his voltage at the motor terminals, the rate improvement he may expect by improving the mill's power factor, and the capacitance required to accomplish this improvement. The power company can give him this data without much effort and will be more than glad to do so. If an examination of this information indicates reasonable savings are possible, an estimate may be secured from a manufacturer of capacitors, indicating the probable cost of a good installation.

VALUABLE BULLETINS ON CAPACITORS

TI No.

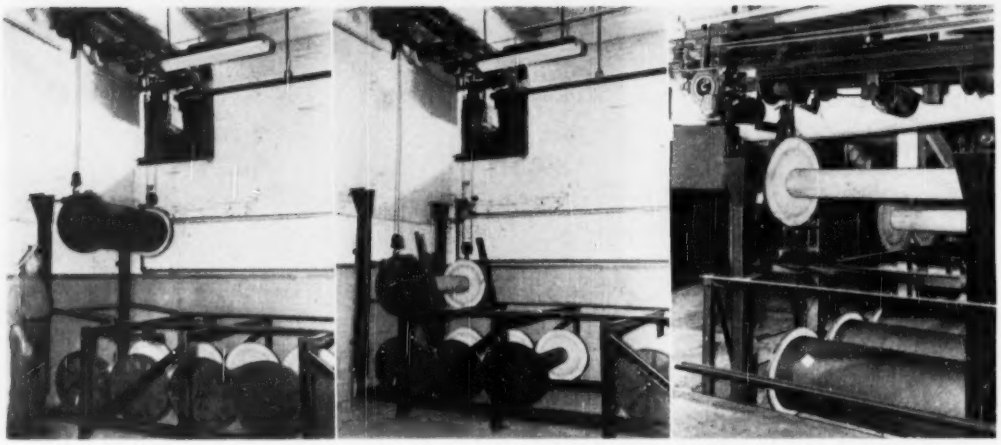
C-1 Capacitors, their use and application in industrial plants, GET-1700. General Electric Company, Schenectady, N. Y.

C-2 Westinghouse Inerteen Capacitors, Application Data 49-060. Westinghouse Electric Corp., Pittsburgh, Pa.

C-3 Power-Factor and Its Improvement, GEA - 3225B. General Electric Co., Schenectady, N. Y.

C-4 Application of Capacitors for Improving Power Factor of Induction Motor Loads, GET-1306A. General Electric Co., Schenectady, N. Y.

These bulletins may be had by using the post card on page 206 and referring to the TI number shown above at left.



AUTOMATIC carrier over rack in slasher room (left) lowers beam which is guided into position for deposit on the upper tier of the rack. Beam automatically rolls off hooks which continue downward to the lower tier to engage an empty beam. Center, carrier unit automatically raises empty crane to upper limit, and the unit returns to the warper room. Right, automatic unit at rack in warper room deposits empty beams and is ready to pick up a full beam for transfer to the slashers.

Arista Mills' Beam Handling System

By EDW. H. DOERGER
American MonoRail Co.

EXCLUSIVE

AN AUTOMATIC beam handling system was installed in the Arista Mills Company, Winston Salem, N. C., to eliminate pushing the heavy beams on dollies up and down the ramps between departments. Full beams are automatically transferred from the warper room on one level to the slasher room on a lower level, and empty beams are returned without attention after the carrier is started.

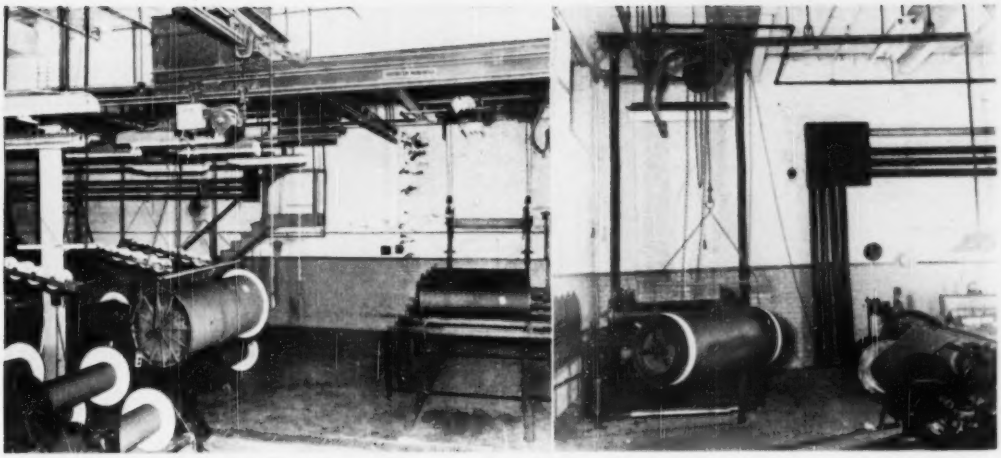
Operation of the system is entirely automatic between specially designed racks in both the warper and slasher rooms. When the switch is thrown in the slasher room, the carrier over the warper rack picks up a full beam, travels to a hatchway over the slasher rack where the beam is deposited on the top tier. Racks are equipped with guides which permit the load hooks to center the beam's ends on the rack channels so that when the hooks continue to lower, the beam rolls by gravity out of the hook and onto the storage rack.

Upon reaching the lower tier, hooks engage the arbors of empty beams and the hoist operation is reversed raising the empty beam to the upper limit switch. A time cycle relay then energizes the MonoTractor which propells the carrier on various tracks to the warper room rack where the empty beams are deposited on the top tier and full beams are picked up from the bottom. The carrier operates automatically, back and forth, until the slashers are creeled.

Beams are moved into position over the slasher creels by means of a short hand pushed MonoRail crane with electric hoist on MonoRail trolleys. The crane bridge interlocks with open tracks over each slasher creel for accurate and fast deposit of the beams.

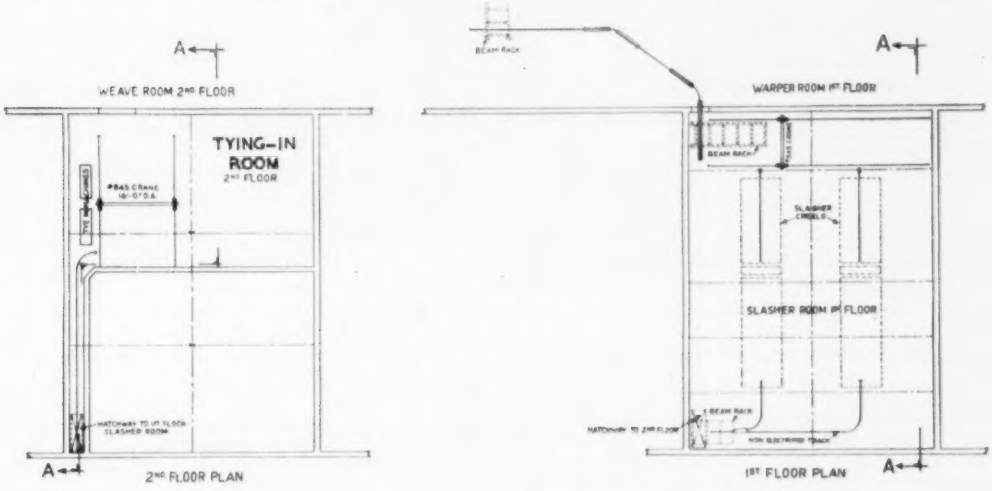
At the doff end of the slashers there is another special rack for transferring slasher beams to the tying-in room on the floor directly above. The full beams are loaded on the lower tier by means of a chain hoist and trolley on a MonoRail track. A switch is provided to reach spurs at each slasher.

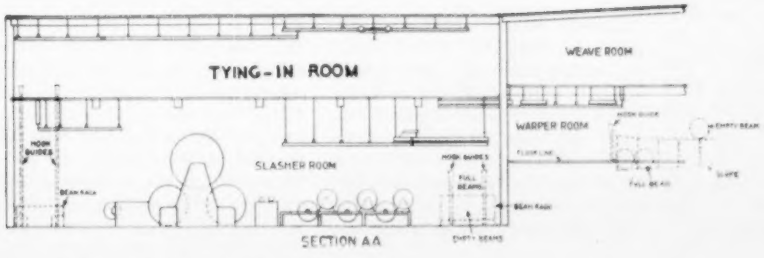
Beams are transferred from racks in the slasher room to the upper level by electric hoist on a MonoRail track in the tying-in room. An operator moves the hoist into position over the hatchway, and by push-button control, and with the same guides, he loads the empty slasher beam on the top tier. Then the hoist picks up a loaded beam from the bottom.



CRANE with electric hoist (left) takes beams from rack, and they are pushed manually to the interlocking spur track over each slasher creel. Right, chain hoist on MonoRail track removes full beams from slasher, carries them to rack for transfer to tying-in room above. This unit also places empty beams on the slashers.

PLAN and elevation showing arrangement of automatic beam handling equipment installed at Arista Mills





Fabian Bachrach
Mr. Swift

OFFICERS OF ACMI

President: George P. Swift, Muscogee Mfg. Co., Columbus, Ga.
Exec. Vice-Pres.: Robert C. Jackson, Charlotte, N. C.
Sec.-Treas.: F. Sadler Love, Charlotte, N. C.
1st Vice-Pres.: Wm. H. Ruffin, Erwin Cotton Mills Co., Durham, N. C.
2nd Vice-Pres.: W. A. L. Sibley, Monarch Mills, Union, S. C.

First Annual Meeting of the

American Cotton Manufacturers Institute, Inc.

GEORGE P. SWIFT was elected president of the American Cotton Manufacturers Institute, Inc., at the association's first annual meeting, held at Palm Beach, Florida, March 30-April 1. Mr. Swift, who is president and sales manager of Muscogee Manufacturing Company, Columbus, Ga., was elevated to the presidency from his position as first vice-president, succeeding Ellison S. McKissick, who served as head of the association throughout the dissolution of the American Cotton Manufacturers Association and the Cotton-Textile Institute—becoming the first titular head of the new association.

The newly-formed American Cotton Manufacturers Institute, Inc., already has in its membership more than 17 million spindles, or 73% of the spindles in this country which are operating on the cotton system. In addition, there are some members of the association who do not operate spindles, such as 25 braider mills, 14 narrow woven fabric mills, and nine plants such as bleacheries, etc.

Excerpts from some of the addresses and reports given at the annual ACMI meeting follow:

Staff Report

Organization Report (Ellison S. McKissick, President, ACMI). The ACMI is providing practically all of the services formerly given by the Cotton-Textile Institute and ACMA. Together the two former organizations were costing the industry approximately $400,000 annually, but through economies which have been effected, a better job is now being done for a little more than half that sum.

With continued cooperation and support [from member mills] ACMI can perfect an institution to represent the industry satisfactorily on a national level. "I am firmly convinced that the ACMI will give our industry the long-desired and much-needed unified voice in dealing with industry-wide problems."

Export Market (McKissick Report). In 1947 the USA exported nearly a billion and a half square yards of cotton cloth. By 1949 this figure had virtually been cut in half; and based on figures for the first month of 1950, we are now exporting at a rate about one-half the 1949 average. As an organization and as individual producers, we must make every effort to sell our goods in the market places of the world.

We are confronted with an alarming situation in the threat of goods coming into this country from nations whose textile industries are virtually subsidized by the American taxpayer. . . . Even a trickle of Japanese goods coming into this country has the effect of demoralizing our domestic markets and jeopardizing the jobs of many of the 500,000 Americans who depend directly upon our mills for their livelihoods. . . . We must concern ourselves with the threat of imports from Germany, from Italy, and from many other nations as well.

Increasing Cotton Consumption (Wm. Rhea Blake, Exec. Vice-Pres., National Cotton Council). In order for cotton to be consumed in increasing amounts it must meet its competition on three vital fronts . . . council has established programs of research to improve quality, programs of efficiency to reduce costs, and programs of promotional activity to intensify sales pressures.

The council cannot successfully do its job of increasing consumption except in an environment

RELAXING DURING THE ACMI PALM BEACH CONVENTION

TOP ROW (left to right): **A. B. Edge, Jr.,** (Callaway), **L. G. Hardman, Jr.** (Harmony Grove); **C. K. Cobb** (Canton), **Turner Jones** (Co.), **L. L.** and **Louis Jones, Jr.** (Canton).

CENTER ROW (left to right): **Mrs. Sydney Bruce, Harold Starke** (Hesslein), **W. M. McLaurin, Sydney Bruce** (Camperdown), **Mrs. Starke;** in bathing attire, **Mrs. James W. Stuart, C. R. Harris** (Pneumafil), **Mrs. Herman Jones** (Atlanta), **Mrs. Harris, Mr. Stuart** (Pneumafil).

BOTTOM ROW: At the Biltmore pool, **Henry Swift** (Swift Spinning) in beach robe; left to right, **George Sessions** (Newberry), **G. O. Lienhard** and **Ray Swetenburg** (Chicopee), **A. D. (Jack) Elliott** (Huntsville).

where private initiative is permitted to operate freely through the American enterprise system . . . and the council takes the position that any public policy or program which jeopardizes the American system of free enterprise, or which embraces or promotes the idea or practice of state socialism, is a matter of vital concern to the one central purpose for which this organization was set up.

In this nation the group which wins the public wins its case; there are nearly 1,000 union newspapers and periodicals published in this country today with total circulation approximately equal to the combined circulation of all the 10,000 weekly, semi-weekly, and tri-weekly newspapers published in towns of less than 50,000 population. Two syndicated services furnish news and cartoons exclusively to labor publications.

Public Relations (Report). The

ACMI RESEARCH COMMITTEE REPORT

The principal reason for the establishment of the research committee of ACMI was to set up a group within the association which is qualified to study and give counsel on questions involving research and technology on the basis of a sound policy in the best interest of the cotton manufacturers.

Problems on Which Unified Front is Helpful. (1) The preventing of changes in the standard atmospheric conditions for testing textile material, (2) in changing certain types of textile fabrics tests, as recommended by the International Standard Group, (3) the matter of bale tie stains, (4) the possibility of stream pollution laws affecting all textile plants in the near future, (5) Research and Marketing Act distribution of funds and the desirability of more representation on this committee in Washington, and (6) legislation, such as flammability of fabrics, etc.

The suggestion was made by the committee that in addition to research directors and technical men on the committee, men from top management be added to the committee (for a further suggestion on this point see News Brief, April TEXTILE INDUSTRIES, page 113; also page 73 of this issue).

Textile Committee on Public Relations employs professional public relations counsel as well as roving reporters and other writers. As a result of the work being done, the public has a higher regard for the textile industry than it ever had before. Unless the industry has the favorable regard of the public, it cannot expect fair treatment in Washington or in the capitals of our various states.

Strength in Individual Ownership (Robert C. Jackson, Exec. Vice-Pres., ACMI). In spite of the fact that the cotton textile industry is one of America's largest, it is made up of relatively small units, with no single operator contributing to total production more than 3 or 4% . . . hundreds of individual ownerships give to it great potential strength. These hundreds of units mean that it is highly competitive, and while this competition may be provoking at times, it brings into play the factors of ingenuity, aggressiveness, resourcefulness, and determination—all of which are the products of our free business system.

Tariff Duties on Textiles (Resolution). The USA tariff duties on cotton textile products have been reduced an average of approximately 25% in the last 10 years, while in this same period of time labor costs have increased over 200%, and the effectiveness of the remaining USA tariff duties on cotton textile products have been seriously jeopardized as a result of many foreign countries devaluing their currency. The cotton textile industry of the USA provides employment for 520,000 persons.

It is the responsibility and duty of management to safeguard and protect the jobs of these employees. "We urge that positive, forthright action be taken by our government toward eliminating unnecessary barriers and restrictions on American textile products in world markets."

ACMI Technical Service. The service to membership is divided into three categories: (1) distribution of technical reports and bulletins dealing with cotton quality and cotton manufacturing problems, (2) representing the institute at important research meetings and conferences, and (3) the handling of requests for technical information from member mills.

The second point includes the cotton fiber training and testing program, also divided into three parts: (a) training of laboratory operatives in techniques of cotton fiber testing, (b) testing of mill's raw cotton for length, strength, fineness, and maturity, and (c) servicing of the mill's cotton testing program.

Safety Quiz Film Available

Something new in training aids, a safety quiz on film, has been announced by the National Safety Council. The film is titled "What's Your Safety IQ?," and it shows common, unsafe, off-the-job actions and conditions that can cause accidents in the home, in traffic and in recreation.

As each set of hazards is shown, workers are asked "What's wrong with this picture?" and are given from 12 to 15 seconds to spot safety errors. Then the narrator points out the hazards in each situation and tells what could be done to remove or avoid them.

The film is divided into three parts: The first, on home safety, shows common kitchen hazards, unsafe conditions in a typical basement, three common causes of falls, and ends with outside-the-house hazards.

The second part, on recreation safety, shows hazards in boating, swimming and hunting, including accidents and illnesses caused by over-exertion.

The third part is on traffic safety, with attention to parking hazards, common errors made by pedestrians, causes of railroad grade crossing accidents, and other driving faults.

"What's Your Safety IQ?" is available from the National Safety Council, 20 N. Wacker Drive, Chicago 6, Ill., both as a 35 mm sound slidefilm and in a new, inexpensive type of 16 mm picture. Each has the same script and illustrations.

Compressive Shrinking

By **PAUL V. SEYDEL**
Director of Research
Seydel-Woolley & Co.

PRESHRINKAGE of cotton cloth has been worked out to a practical solution only in the past couple of decades, despite the fact that dimensionally stable cloth from the point of view of the consumer is probably more important than stability in any other quality.

Shirts and dresses may be worn for some time after colors have faded or the effect of the finish has disappeared, but once they become too small, they are no longer of any value to the wearer.

While a partial solution of the problem was obtained through washing of the goods or moisture treatment under relaxed conditions, this had several drawbacks. The usual type of treatment practical in the mill at reasonable cost did not completely shrink the goods, and further shrinkage was obtained when the fabric was washed by the consumer. Further, the hand and appearance that the finisher had worked so hard to obtain was destroyed, leaving usually a wrinkled and raggy piece of goods which had no customer appeal.—The Author.

THE THREE METHODS open to the finisher for obtaining a shrinkproof fabric are (1) chemical treatment of the cotton to alter its properties, (2) filling with materials such as resins to "set" the yarns and fibers, and (3) mechanically forced shrinkage to the point where further dimensional change does not occur on washing. The latter method, called "compressive shrinking," is today the most widely used for cotton, and will be described here.

Theory of Shrinking. Cotton fabrics are said to shrink as a result of the relaxation of tension which is put on them during the processes of drawing, spinning, warping, sizing, weaving, and finishing. The fact that cloth usually shrinks more in the direction of the warp, which has been subjected to most of the tension, rather than the filling, would seem to substantiate this contention.

However, we must understand that this "tension" is not at all like that of a stretched rubberband, which immediately returns to its normal dimensions as soon as the stress is removed. Cotton fabrics do not relax completely when the stress is removed. Nor is the assumption that cotton is imperfectly elastic sufficient, since the fabrics do not shrink the full amount, or even any appreciable percentage of it, on storage, on physical handling, or even on dry cleaning.

We must assume then that the tension is not actually present in the yarn as we usually understand tension. If the tension were actually present in the cloth and in the yarns, and remained there due to frictional effects of the fibers on each other which prevented sliding back to points of relaxed tension, then it would be reasonable to assume that mechanical handling in the presence of lubricants would give full relaxation (considering for the moment that we are dealing with desized cloth, where the effect of the size in holding the fibers in place is not present). Table I shows the difference in effect of a regular laundering of a rayon-cotton blend, and that of the same kind of physical treatment, using first a solvent alone (no water), then a solvent containing a lubricant (see bibliography reference (1) at end of article).

Johnson (2) showed further that from 65-85% of the shrinkage of desized cloth could be obtained by soaking in water alone, without any mechanical action to help "relax" the fibers (Table 2).

It is also interesting to note that the effect seems to be rapid (Table 3). Shrinkage may be occurring as rapidly as the water is absorbed

TABLE 1*

Per Cent Shrinkage

Washed with:	Warp	Filling
Soap and soda ash	13.1	4.8
Benzine	0.4	0.2
Benzine and oil	0.1	0.0

*In considering these and further figures presented, variations as small as a few tenths of a per cent are insignificant, and are usually due to differences in handling by the operator of the test.

TABLE 2

Per Cent Shrinkage of Desized Cloth

Fabric	After soaking 30 minutes in water at 120 F		After laundering 55 minutes at 120 F (3" suds, 8" rinse levels)	
	Warp	Filling	Warp	Filling
1	4.0	0.9	4.5	1.0
2	1.9	0.2	2.6	0.2
3	2.0	1.0	2.1	1.5
4	2.8	0.9	3.4	0.9

TABLE 3

Warp Shrinkage in Inches per Yard (overall material) After soaking

2 minutes	10 minutes
2.5	3.0
2.7	3.2
2.7	3.6
2.5	3.3
2.8	3.3

into the cotton fibers themselves (2).

Effect of Water on Shrinkage. These figures indicate two things to us. First, we are not dealing with an ordinary relaxation of tension as we understand it. Second, from the practical finisher's point of view, water is a very important ingredient in shrinkage. So far, water, either by itself or with other materials, is the only ingredient reported to effect shrinkage.

Rath (1) and others have come forward with an explanation of this. Water is the only one of these materials tested which has the property of swelling the cellulose. The fiber swells 28% in cross-section and about 1% in length on absorbing water.

Suppose now we examine the effect of this swelling on a twisted yarn. In Fig. 1, the unswollen yarn "A" shows the fibers, each at a certain angle to the axis of the yarn. When these fibers swell with water ("B" in Fig. 1), it forces not only an increase in the yarn diameter but also increases the angle the fiber makes with the yarn axis. And, as the fiber has farther to go around this larger yarn didiameter, since it does not swell in length, it must make up for it by pulling the yarn in—shrinking it—and giving a shorter yarn.

If this is the reason for shrinkage, then why doesn't the cloth stretch again when it is dry? Well, part of it is due to the fact that, unless tension is put on the cloth, the fibers just stay where they are, giving a looser, fuller yarn and cloth. Part of the answer is that the cloth will stretch some, if the same tension is on it while it is drying as when it is wet—observe the way a canvas tent tightens in the rain, then becomes loose again on drying out.

We can note this effect also in ironing. Williams (3) shows a dimensional increase of several per cent on pushing the iron with warp or filling, as compared with a simple pressing in which the iron is held stationary. Cotton is slightly plastic when damp, and if forced into any position and held while drying, it will tend to remain in that position—as any finisher knows whose tenter adjustments ever gave bowed cloth. (This is the property on which compressive shrinking is based.)

This plastic property of cotton is probably also part of the cause of potential shrinkage. The wet yarns or cloths are dried under some tension during sizing or during any of the finishing processes. And, of course, where we are considering fabrics that have not been desized, the size will be a very big factor in preventing relaxation of tension, simply by its mechanical presence. If we compare Table 4 (bibliography ref. 2) with Table 2, we see that with heavily starched goods, soaking alone will not bring about the shrinkage that laundering (softening the size or finish and washing much of it out) does.

Here it is seen that only about 26% of the potential shrinkage is removed by water alone.

Probably the low shrinkage on soaking alone was at least partly due to the starch preventing proper wetting of the goods, so that the cotton fibers did not absorb all the water that they normally would.

Shrinkage Factors. Shrinkage in cloth, then, is probably due to three factors: deforming and shortening of yarns when fibers are swollen, relaxation of tension due to difference in plasticity of wet and dry cotton, and relaxation of the mechanical hold of sizing and finishing ingredients. In addition, there is the effect of readjustment of crimp of warp and filling yarns around each other to give maximum relaxation in the

Fig. 1. Sketch showing effect of swollen fibers on a twisted yarn. Unswollen yarn is designated A; swollen yarn, B.

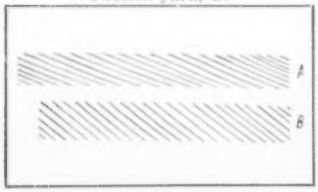
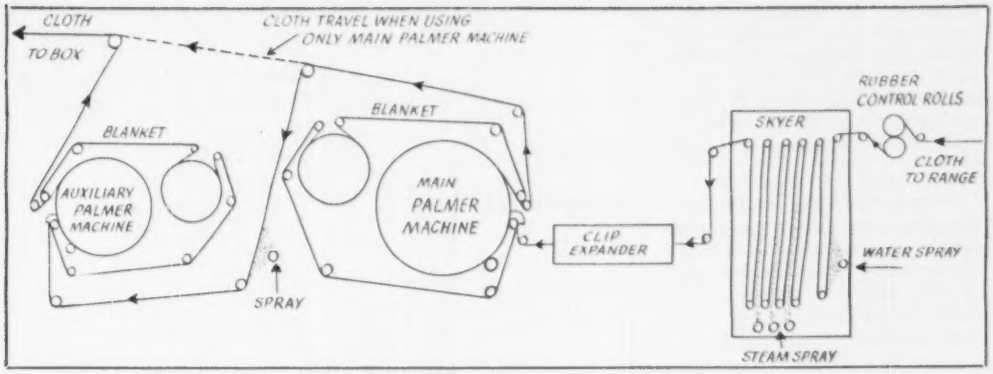


TABLE 4

Shrinkage of Heavily Starched Interlining Fabrics

Fabric	Soaked in water 30 min. at 100 F.		Common Laundry type wash	
	Warp	Filling	Warp	Filling
1	0.7	—	1.9	—
2	0.5	0.9	2.0	1.6
3	0.3	0.3	2.1	0.3
4	0.7	0.3	2.5	0.3



Path of goods through a compressive shrinkage range for the Sanforized process is shown in this sketch. (Note: a heating cylinder may be installed between skyer and clip expander.)

fabric (4) (this particular factor contributes some stretch in one direction to correspond to shrinkage in the other).

If yarns are treated, as for instance with fiber-filling resins, so as to prevent the swelling action of the water, it is claimed that such fabrics will hold part or all of the stretch put into them by processing (5, 6). We see, therefore, that the swelling action of the water is the one important effect in shrinkage.

Is there anything which will contribute to this effect? Apparently not. Only in so far as they remove obstacles to water absorption such as natural cotton waxes or added ingredients, do any of the detergents seem to have any great effect. Both Rath (1) and Johnson (2) give data to show that neither heating the water, nor addition of soap, salt, or mild alkalis have appreciably greater shrinking effect than plain cold water. Only where the wetting and swelling action of the water is interfered with (Table 4) are outside assistants required.

Shrinkage Testing. Since shrinkproofing by compressive shrinking can compress the fabric so much that it will stretch when

SHRINKAGE OF TEXTILES

Cotton and Linen
Standard Test Method
14-33

(1949 Technical Manual and Year Book of the American Association of Textile Chemists and Colorists, page 146.)

Scope. This method of test is applicable to cotton and linen fabrics.

Apparatus. Washing machine of the cylindrical reversing wash wheel type equipped with a pipe for injecting live steam (1).
Flat bed press (2) or hand iron.

Materials. Soap (Fed. Spec. P-S-566 or ASTM:D496). Stock solution may be used containing 1 pound chip soap in 1 gallon of water.

Test Specimens. The sample of cloth taken for test shall be at least 20" square. A piece 20" in length and the full width of the material is recommended. The sample shall be laid out without tension on a flat surface, care being taken that the cloth is smooth and free from wrinkles or creases. Three distances, each of 18" (or longer when the size of the sample permits), shall be marked off on the sample in both the warp and filling thread directions. The distances shall be parallel to the warp or filling threads, at least 6" apart, and at least 1" from all edges of the sample. Satisfactory marks may be made with indelible ink and a fine-pointed pen or by sewing fine threads into the cloth, or by a suitable mechanical marking device (3).

Procedure. A load which is normal for the washing machine shall be washed each time. The load may be made up of test samples and additional cloth as required. The amount of wash solution or rinse water shall be normal for the machine and in any event sufficient to cover the samples. Usually, an amount weighing about 50 times the weight of dry cloth will be sufficient.

Washing. (a) The wash wheel shall be kept running continuously for 60 minutes from the start of the test. The wet cloth samples will thus be tumbled in the machine while the latter is being drained and filled. This is essential. Each operation shall be carried out without delay.

(b) The samples to be tested and such additional cloth as is necessary to make up the load shall be placed in the wheel which shall then be started running. The required amounts of water at a temperature not exceeding 100° F (38° C), and of soap shall then be added. The temperature shall be raised to 212° F (100° C) (preferably by injecting live steam into the wheel), and the heat then shut off. The machine shall run for 40 minutes from the time it was started. The soap solution shall then be drained off, the machine filled to the proper level with water, and the temperature of the water raised to 140° F (60° C). At the end of 5 minutes (45 minutes from the start of the test), the water shall again be drained off, the wheel filled with water, and the temperature of the water raised to 140° F (60° C). At the end of 10 minutes the water shall be drained off and the machine allowed to run without further additions to complete the full 60 minutes of operation.

Drying. (See the next paragraph for an alternative method).

The samples shall be removed from the wheel and the excess water squeezed from them by hand. Wringing by hand or with squeeze rolls is not permissible as either may distort the cloth. The samples shall then be spread out on a horizontal screen or similar perforated surface and dried in a current of air. If a heated drying chamber is not available, the samples may be dried at room temperature in a current of air from an electric fan. The dried samples shall then be dampened with water and allowed to stand for 5 minutes.

Extracting. (This is an alternative method to the drying procedure of the foregoing paragraph).

The samples shall be removed from the wheel and extracted by means of a centrifuge (or other suitable extractor) to approximately 55% moisture content, after which they shall be pressed.

Pressing. The samples shall be pressed either with a flat-bed press or a hand iron, care being taken in handling them to avoid any strain on the cloth. Each sample shall be smoothed to remove wrinkles before pressing. When a hand iron is used, the iron shall not be slid back and forth on the sample but simply pressed down upon it in a manner simulating the action of the flat-bed press. The specimen shall be allowed to cool before it is measured.

Evaluation. The pressed sample shall be laid out without tension on a flat surface, care being taken that the cloth is smooth and free from wrinkles or creases, and the distances which were marked off shall be measured again. The shrinkage in the warp and in the filling shall be calculated separately as the average obtained from the three marked distances. The shrinkage in laundering is the change in the distance measured and shall be expressed either as a percentage of the dimension before laundering or in inches per yard.

washed, it is necessary before processing to determine the amount of shrinkage that laundering will produce, in order not to overshrink. The standard wash test of the AATCC (also Federal Specification CCC-T-191a) is used (7).

Since some fabrics, particularly those heavily starched, will shrink further on successive launderings (8) it may sometimes be advisable to give the cloth several treatments before deciding how much compression should be used.

Compressive Shrinking. Mechanical "compressive shrinking" is carried out by forcing a dampened cloth to the dimensions desired (previously determined by shrinkage tests) and drying it while in those dimensions. The dampening with water or steam has two purposes—to force some shrinkage by fiber swelling, and to "plasticize" the cotton sufficiently so that the cloth may be compressed lengthwise without wrinkling.

The compression is carried out by bringing the cloth into contact with an expanded surface and holding it there while the surface is compressed or allowed to relax. In the Sanforized process, this surface is a thick blanket; in the Rigmel process (used principally in England) the surface is a stretched India rubber belt.

Sanforized Process. The essence of the Sanforized operation is shown in the diagram in Fig. 2; the cross-section of the cloth is very much over-scale, to show how it is compressed. Cloth is fed onto the blanket, which may be from 0.15 to 0.50 in. thick. The cloth is held on the blanket by the pressure of electrically heated steel shoes up to the point where the curvature of the blanket changes direction as it goes onto the drum.

Where the blanket is curved around the feed roll, its outer surface is expanded (while the inner surface contracts). As the curvature changes, that is, the outer surface becomes an inner surface, this surface must be compressed.

This action can be very easily demonstrated by bending a magazine. If the outer edges of the pages are then held together, and the bend reversed, it can be seen that a considerable amount of compression would be necessary to make the pages fit together again. Although this cannot be easily done with paper, construction of the cloth is such that by increasing the crimp (see Fig. 2) in the warp yarns the compression is quite readily accomplished.

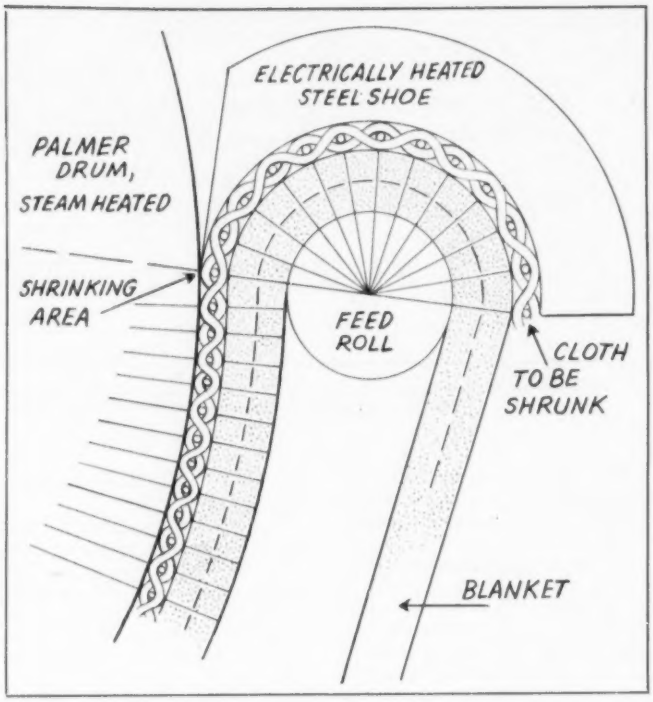


Fig. 2. Diagram illustrating principle of Sanforized operation.

At this point of compression, tension on the yarns is, of course, immediately relaxed, and some natural shrinkage can occur. There is probably insufficient time to allow complete shrinkage readjustment of the fibers before the fabric is dried by the Palmer machine drum. Therefore there will be some compressive tension which will be relaxed on future washing, but this will be counteracted by the final stages of shrinking to give the desired dimensions (4).

Obviously, the only control over shrinkage here is the comparative outer diameters of the feed roll and the Palmer cylinder. As the latter is so large in comparison to the former, its effect may be neglected, so that if cloth were fed to the machine without tension, the only control would be by changing the diameter of the feed roll or the thickness of the blanket (necessitating changing shoes to fit). As the natural shrinkage of goods may vary from 3% to 12% or more, further control is needed (9).

This control is furnished by use of a pair of rubber control rolls which feed the cloth to the machine under tension, stretching it so that the combined stretch and shrinkage give the proper dimension change.

In this way, the blanket, shoes, and feed roll may be of such size as to give the maximum shrinkage that will ever be needed, and the control rolls may be set for each cloth at such a speed or tension as to compensate for the excess shrinkage which would otherwise be put in the cloth.

Shrinkage in the filling direc-

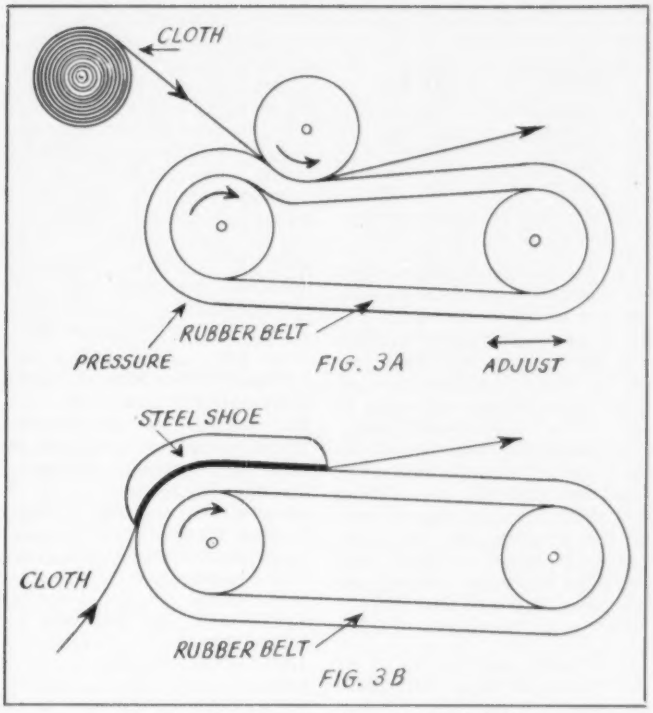


Fig. 3. The Rigmel process of compressive shrinking.

tion is taken care of by the fact that the tension put on the cloth in the warp direction forces a contraction in the filling direction. This is a result of the straightening of the warp yarns, causing an increased crimp and therefore a contraction of the filling yarns. Often this filling contraction is of such extent that a clip expander must be used for pulling out the filling again just before entering the machine, if filling dimensions are important.

Between the control rolls and the main machine, the cloth passes through a skyer, where it is sprayed with water or steam or both. The heat of the steam and the working and bending of the cloth around the skyer rolls assist in penetration of the water into the fabric. For fabrics which are difficult to wet easily, a pass around a heating cylinder after wetting also helps.

Wetting of Cloth. Since very little time elapses between the wetting of the cloth and its compression, it is absolutely essential for good results that the cloth will wet out rapidly and evenly. Uneven wetting will result in puckered and creased goods.

Nor can this be corrected by use of more water. Excess water will soften starch finishes, causing the shoes to gum up and cool off, so that the fabric sticks and causes more creases and pleats. Further, some of the finish may come off on the blanket, making it necessary to remove the blanket and wash it.

Fabrics are therefore treated in the last process before shrinking with re-wetting agents which enable them to absorb water very rapidly and evenly. Without these materials it would be extremely difficult or impossible to obtain uniform results with some types of fabrics, and they are undoubtedly of help in all cases.

Rigmel Process. The Rigmel process of compressive shrinking operates on the same theory as the Sanforized process (10). Instead of using a blanket, the cloth is brought into contact with an expanded India rubber belt about two or three inches thick, and held in contact with the belt as it contracts. The expansion is produced by pressing against the belt with a smooth surfaced steel roll in one instance (Fig. 3a); in another type a steel shoe holds the cloth against the rubber which is expanded as it goes around a roll, and continues to hold it during the period of contraction as the belt straightens (Fig. 3b).

It is interesting to note that drying of the cloth while it is held in its compressed state as is done on the Sanforizer does not seem to be essential. In the Rigmel machine the cloth passes from the compressor to the dryer (also a Palmer dryer) without being held in position as it is on the Sanforizer.

The dryers act not only as such, but give a finish to the goods. Therefore, where it is necessary to obtain a finish on both sides of the goods, it is necessary to employ a second Palmer dryer so set up that the goods enter with the other side toward the heating drum. On range for making Sanforized fabrics, this second machine may be used as an auxiliary shrinker as well, or it may be used simply to obtain the desired finish.

Blankets. In determining the size of blanket required for the dryer, two things must be considered. The thicker the blanket, the more its surface will expand and contract, so that thick blankets give more shrinkage. On the other hand, a thick blanket will give a rougher finish to the goods. Unless this is desirable, the blanket should be only thick enough to take care of the maximum shrinkage which must be produced. In extreme cases, goods may be run twice through the machine if one run does not produce sufficient shrinkage.

Auxiliaries for Compressive Shrinking. As we have seen, an adequate absorption of water is necessary for proper compressive shrinking. Therefore, the most important consideration is the re-wetting properties of the agent. The agent must be able to pick up

TABLE 5

1% solution of commercial agent	Wets skein of cotton in	Rewets (drop test)
Alkylarylsulfonate	5 sec.	28 sec.
Alkylarylsulfonate	8 sec.	229 sec.
Sulfonated castor oil	140 sec.	203 sec.
Petroleum sulfonate	220 sec.	27 sec.

Seydel-Woolley & Co. Laboratories

moisture rapidly and evenly from the spray and cause it to penetrate thoroughly into the fibers within the few seconds that the fabric takes to pass from the spray to the shrinker.

A very wide range of rewetting agents is available, based on many different types of sulfonated products. This enables the finisher to choose the type needed to produce the hand desired for his particular piece of goods. For example, he may use an alkyl aryl sulfonate type, which is a very efficient rewetter giving a stiff, papery, or boardy hand. Or, he may use sulfonated vegetable oils (as rewetters only fair) which give soft, smooth finishes. Most generally in use are the petroleum sulfonates, which are excellent rewetters, and when blended with the proper petroleum oils give a finish almost as soft as the vegetable oil sulfonates.

Combination Finishes. Combinations of finishes may, of course, be used. Sulfonated tallow softeners blended with alkyl aryl sulfonates will give a soft full hand without losing any of the desirable rewetting power of the latter materials.

Shrinking agents should, of course, have all the normally desirable qualities of a good finishing agent, since they are to remain on the goods. They should not develop color or odor on storage, and should have no tendency to mildew formation.

In the case of sulfonated animal or vegetable fats, which normally have a certain percentage of free fatty acids, hard water can cause the formation of some lime soap curds. Where this condition can occur, these products should be used only if there is a sufficiently high proportion of combined SO_3 to keep lime soaps dispersed. The lime soap curds will not only dull the finish and cause them to have a slightly sticky feel, but more important to the shrinking process, they are water repellent and will prevent proper absorption of moisture by the cotton fibers (11).

Practically all, if not all of the rewetting agents commercially available, are sulfonates. The nonionics, cationics, and soaps in general do not have very good rewetting characteristics. Even some of the sulfonates that are very good primary wetters are not so satisfactory from the standpoint of rewetting.

The samples in Table 5 are selected to show that the rewetting properties cannot be predicted from the primary wetting properties. In order to be a good rewetter, the agent must not only be strongly attracted to the cotton, but must be easily wet with water.

Many excellent wetting agents when obtained as dry powders will float on the surface of water, dissolving only slowly without being wet themselves until enough has dissolved to act as a wetting solution for the rest.

In addition, the rewetting properties are not peculiar to any particular class of agents. Much more variation is obtained among members of a class of compounds than is found in the average of the different classes. Certain akyl aryl sulfonates are very good rewetters; others are poor. In the field of petroleum sulfonates, those with low molecular weights are generally many times more efficient as rewetters than those with longer chains in their molecules.

Effect of Other Materials on Rewetting. Further than this, it has been shown that the rewetting properties of any one particular agent may be strongly affected by the other materials used in admixture with it in the finishing formula. Starch or dextrine sometimes gives a definite improvement, sometimes retards the action slightly. Certain weighting agents may very markedly increase the speed of rewetting. Table 6, an extract of work which is to be published shortly, shows examples of this effect. (This particular weighting agent is a blend of dextrin, sodium sulfate, and china clay.)

From this it may be seen that to obtain a true evaluation of any rewetting agents under consideration, they should be tested under the conditions and with the formulas with which they will be used.

Amount of Rewetter to Use. In determining the amount of rewetter to be used in any particular instance, consideration should be taken of the cloth construction and weight, of the previous treatment, and of the amount of extraneous material (in the form of sizing, etc.) present. A light weight open weave which has been desized and bleached and has had

TABLE 6

Agent	Drop test rewetting time, 1% agent		
	As Is	With 1% 40F Starch	With 1% Weighter
Alkylarylsulfonate	10 sec.	7½ sec.	6½ sec.
Alkylarylsulfonate	6 sec.	1 sec.	under 1 sec.
Petroleum sulfonate	11 sec.	13 sec.	7½ sec.
Petroleum sulfonate	36 sec.	25 sec.	14 sec.
Propyl oleate sulfonate	22 sec.	13 sec.	10 sec.

Seydel-Woolley & Co. Laboratories

nothing further added to it may be so absorbent in itself that it will not require any rewetter to be handled in the Sanforizer or Rigmel machine. The heavier the goods and the more size or starch they contain, the greater the need for rewetting agents.

According to the cloth, the amount of agent used may vary from ½% to 3% or more. If the amount required is determined by laboratory test, enough extra should be added as a safety factor to take care of normal variations. Often mills add more of the agent than is required for rewetting alone in order to take advantage of its effect on the hand. This will have to be determined by tests in the finishing plant, since it is practically impossible to duplicate in the laboratory the effect on hand of large scale operations using production machinery.

Hand Produced by Agents. While the hand will vary somewhat between members of any particular group or type of agents, it may be said in general that the feel or hand produced by akyl aryl sulfonates is inclined to be stiff, papery, or boardy; that produced by petroleum sulfonates and oils is softer; and that produced by sulfonated or soluble tallows is not only softer but also somewhat fuller.

The vegetable oil sulfonates seem to produce an effect intermediate between that of the petroleum sulfonates and the sulfonated tallow. Normally, blends of these materials will produce the intermediate effect. Alkyl aryl sulfonates can be used where soft hand is desired if sulfonated oils or tallow is used along with them. (It should be remembered that the effect of tallow sulfonates on rewetting absorbency is negligible.)

Effect of Agents on Shade. Another difference that has been noted with the different types of rewetters is their effect on shade. Certain colors, notably the pigment colors and indigo, are markedly affected in shade by the type of agent used.

Not enough work has been done on this to be able to say definitely what change may be produced by any specific rewetter. However, it seems that the alkyl aryl sulfonates have the least effect and oils the greatest. On indigos the tendency of the former is to give brighter shades with a reddish cast, while the latter gives darker shades with gray tendencies. The question of which is more desirable is a matter of taste or customer preference.

Effect of Other Materials. While other materials may be added to the finishing formula before the pre-shrinking process, these generally have little direct effect on the process other than their influence on the rewetting time of the absorbent agent. Starches and weighting agents are often used to attain a desired hand, as are sulfonated and soluble oils and fats. The sulfonated oils usually act somewhat as weak rewetters; the others have little effect. Mixing paraffin oils with the petroleum sulfonate rewetters seems to have within limits no appreciable effect on their rewetting power.

Effect of Percentage Size. The amount of size on the goods seems to have more effect on making the pre-shrinking difficult than does the type of size. Though desizing is always helpful as a preliminary process, it can generally be dispensed with if enough of the proper type of rewetting agent is used.

Rewetting Agent in Size Formula. Attempts to put the rewetting agent in the warp sizing formula have met with practically no success. In the first place, if enough agent is added to be effective as a rewetter, it is usually too much for a softener (when the oil type) and will give warps that shed badly in the weave room—

REWETTING AGENTS

Tentative Test Method
27-44

(1949 Technical Manual and Year Book of the American Association of Textile Chemists and Colorists, page 146.)

Scope. This method of test is applicable to commercial rewetting agents.

Supplies and Apparatus. (a) Two rewetting agents for comparison.

(b) Fairly heavy cotton cloth in the grey; cloth must not have been boiled, bleached or desized. Army herringbone twill is suggested for use in this test.

(c) Small padder. A household wringer with improvised pad box is satisfactory in lieu of a small padder.

(d) An embroidery hoop like that used for testing the spray ratings of water-repellent fabrics.

(e) A buret which delivers 15 to 25 drops per milliliter.

(f) A stop watch.

(g) A laboratory room in which standard temperature (70° F) and humidity (65% R.H.) are maintained. Although satisfactory comparisons can be made in the ordinary laboratory, the results should be more reproducible under standard conditions.

Application of Rewetting Agent. A solution of the rewetting agent is prepared by pouring 100 ml. of hot water over the required amount of the product in a small beaker or casserole. This solution is heated above 200° F for a moment and then is diluted with cold water to a final volume of one liter. The temperature of the solution in the padder box for application should be 70 ± 5° F.

The padder is adjusted to a uniformly firm squeeze from side to side. On a household wringer it has been found that a dozen half turns of the wing nuts from the place where they just begin to take hold is satisfactory.

A strip of the selected cotton goods which has previously been conditioned at 70° F and 65% relative humidity for at least 24 hours is padded three times through the solution of the rewetting agent. Three times through ensures thorough and uniform penetration of the cloth. The pickup should be from 60 to 90 per cent.

The padded cloth is dried in air at approximately 180° F for 30 minutes and then conditioned at 70° F and 65% R.H. for at least 24 hours.

Four strips of padded cotton are prepared for each rewetting agent representing respectively, four concentrations for each product to be tested. Concentrations generally suitable are 2.50, 5.0, 10.0 and 20.0 g. of rewetting agent per liter.

Rewetting. A square of the padded, dried and conditioned cloth is mounted in the embroidery hoop. The buret containing either distilled water or tap water, whichever is desired for the test, is adjusted so that it delivers one drop of water at 70 ± 5° F approximately every 5 seconds. The surface of the taut cloth is held about ⅜ inch (1 cm.) below the tip of the buret and the stop watch is started just as the drop falls on the cloth. The watch is stopped when the liquid on the surface of the cloth loses its specular reflective power. This point is determined by placing the hoop between the observer and a source of light —such as a window—at such an angle that the specular reflection of light from the surface of the flattened drop can plainly be seen. As the drop is gradually absorbed the area of this tiny mirror diminishes and finally vanishes entirely, leaving only a dull wet spot behind. It is at this moment that the watch is stopped.

Evaluation. Readings of rewetting time are made so easily and quickly that ten are taken for each concentration. The average times of disappearance of a drop for 2.50, 5.0, 10.0, and 20.0 grams of rewetting agents per liter of pad liquor are then plotted on log-log coordinate paper with concentration as the abscissa (X-axis). A straight line is drawn to approximate the four points as nearly as possible.

From this line relating disappearance time to concentration, one can find the concentration which would give a disappearance time of 10 seconds. This is called the rewetting concentration for the product. A corresponding value is then determined for the second rewetting agent. By using a simple proportion with these figures it can be calculated how many parts of the second product are equivalent to 100 parts of the first product (or Standard) for rewetting.

an effect typical of sulfonated products.

Also, many of the usable agents, such as the alkyl aryl sulfonates, cause very bad foaming in the size box, making a decent sizing job impossible. In addition, there is no rewetter at all on the filling yarns, which will greatly decrease the power of the cloth to absorb water, as they contain the usual cotton waxes which repel water even more than does the size.

Agents to Avoid. Tacky oils, dextrins, glucose, and many gums should be avoided wherever possible, or used only in small quantities. When the cloth is wetted in the spray, their stickiness is accentuated, and they then stick to the electrically heated shoes of the Sanforizer or the blankets and drums of the Palmer dryers. The difficulties this will cause are many. Spotty blankets and drums which give spotty finishes are bad —even worse may be the result of gummy shoes in giving creases, pleats, wavy cloth, and non-uniform shrinking.

Testing of Agents for Compressive Shrinking. 1. Rewetting Speed. The test normally used for rewetting speed is the standard method of the AATCC (1949 Yearbook, page 146). This method of measuring the time of absorbency of a drop of water which has fallen on the fabric is a much better approximation of the conditions of spray wetting than was the old method of measuring the sinking time of a treated canvas disc.

It cannot be too strongly emphasized that very large variations can be obtained if the cloth used varies. With the same rewetting agent, absorbency times of from a few seconds to several minutes can be obtained by using cloths varying from a heavy duck to a light poplin.

The variation in size content will also affect the absorbency of the treated cloth sample. When using twills for testing, it has been noticed that the face (principally sized warp yarns) has a different absorbency than the back (filling side).

(Testing of Agents) 2. Rancidity Test. A sample of the cloth treated for rewetting tests is put into a clean fruit jar and stored for a month or two at room temperature. Development of the typical rancid odor of oxidized oils would mean that the oil would be rejected as unsatisfactory. Care should be taken that the cloth is dry when stored, otherwise mildew will result which will mask other odors.

It should be noted that practically all organic materials contain small amounts of more or less volatile constituents. When stored in this manner in a closed jar, these volatiles will saturate the air in the jar, giving rise to many different kinds of odors—this can be noted with untreated cotton alone. These odors should not be confused with the rancid odor which comes from actual decomposition of unstable oils.

(Testing of Agents) 3. Scorch Test. The scorch test is made on a sample of the cloth treated for rewetting test. The cloth is exposed to a temperature just below that necessary to color the cotton.

In evaluating the results of this test, a piece of untreated cloth should also be heated to determine if any color is obtained without the rewetting agent. Some size materials may discolor at the test temperature, and cotton from some sources is more susceptible to heat discoloration than that from other sources.

Also it should be remembered that development of color by the scorch test does not necessarily mean that color will develop on storage or ageing. Sugar will scorch at comparatively low temperatures, particularly with a slightly alkaline pH, but may be stored indefinitely without any color change whatsoever. The same is true of many organic chemicals. And there are some materials which change color on storage due to the effect of light and oxidation, and which are not greatly affected by heat.

In other words, the writer does not put much stock in this test as a means of evaluation, but offers it for what it may be worth as one of the tests used by some laboratories. There is also an "accelerated ageing test" which consists of storage of the treated cloth for a certain period in an oven at temperatures about 350 F. This test is subject to the same criticism as the former.

The scorch test, as carried out in the author's laboratory: Two half-inch-thick stainless steel plates, four inches square, are placed on a hot plate controlled by a variable transformer. Temperature is raised to 200 C (measured by thermometers in the steel plates) and held at that temperature for 10 minutes to insure steady heat conditions. The upper plate (which has a wooden handle, and is held in place on the lower plate by steel pins) is then lifted, and a piece of cloth inserted. The cloth remains for 30 seconds and is then removed, allowed to cool, and compared with the sample of untreated cloth which has also been heated.

Note: In the author's laboratory it has also been noted that with certain types of rewetting agents which are not very good primary wetters, notably the petroleum sulfonates, a great increase in wetting speed may be obtained if the agent is padded on the goods at elevated temperatures, as is the usual mill practice.

These materials will wet the goods and penetrate them thoroughly under mill conditions (in hot solutions), but in cold solutions such as the AATCC test prescribes they do not have the full opportunity to penetrate, and therefore are not picked up to the extent that they will be picked up in the mill — nor are they even uniformly picked up. Visual observation often shows spotty pick-up with these agents.

It is extremely unfortunate that padding for the standard test is not carried out at 75° C or even at the boil, since a true value for these excellent agents is not obtained when they are applied at room temperature, even with three squeezings. The test should be modified to give a more accurate picture of agents that are not good wetters in the cold.

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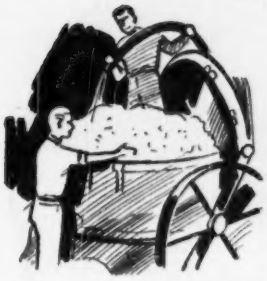

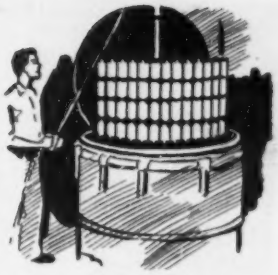

Dyeing Wool Stock, Tops, and Yarn

Article 2*

Suggestions for applying acid dyes to wool.

EXCLUSIVE

By ROBERT W. JOERGER

ACID DYES are so-called because they are generally applied from an acid bath. They vary greatly in price, shade, and fastness properties; therefore, these three factors must be considered before selection of the dyestuff is made.

Cheap acid dyes are available for as little as fifty cents per pound, whereas the most expensive ones sell for ten times that amount. They are very popular with wool dyers because as a rule they are easy to apply, many are very level-dyeing, and some are unsurpassed for brightness.

Fastness. The majority of the acid dyes are not fast to wet treatments, and for that reason they are used where this property is not important. They are not as fast as chrome colors, but they are brighter. For some shades, like certain reds, greens, blues, and violets, the acid colors are much brighter and may be used alone or as shading colors along with chrome dyes. Some of the milling type dyes will stand the bi-chrome treatment and are sufficiently fast to wet processing.

It is not necessary to discuss at length the fastness of acid dyes to various agencies. The books and other literature from dyestuff manufacturers list as many as sixteen, including light, washing, perspiration, etc.—all carefully tested and rated. This information is very reliable and is extremely helpful in choosing the right dye for a particular purpose.

Acid Dyes on Loose Wool. Acid colors are used for dyeing wool in various forms. In the dyeing of loose wool, rags, and slubbing the very best leveling type of dyestuff is not essential as the material is well mixed in subsequent yarn manufacturing processes. Two or more colors may be processed together after dyeing or with white to give heather effects, lovely blends of contrasting shades, or effects not obtainable if the wool is dyed solid in the same general tone.

When dyed stock is used for making woolen yarns, it is very likely that the color must be fast to milling, and possibly to potting —a very severe requirement. Some dyed stock is used in making blankets; some for mixing with cotton; to a lesser extent for the manufacture of carpet yarns, and a little for felt for hat making where fastness to light and acid milling are of primary importance. Although loose wool stock is the most expensive form in which wool is dyed, the results are best where penetration and levelness are required.

Shoddy is ordinarily dyed with the cheaper dyes, but these should withstand milling.

Acid Dyes on Slubbing. Dyes for slubbing can be less wet-fast as the goods receive only a light milling when made into worsted yarns for fancy worsted fabrics. Yarns made from dyed slubbing are also used for articles like bathing suits and hosiery.

Acid Dyes on Yarns. Yarns are dyed with the best leveling types of acid dyes, especially for the pale shades, as any unevenness would be quickly seen if the yarns were knitted into garments or used

*The first article of this series appeared in the April 1950 issue of TEXTILE INDUSTRIES, beginning on page 130.

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as the pile for a solid colored carpet. For deep shades, the milling type dyes can be used; for darker shades, chrome colors are best.

Fine woolen and worsted yarns are used by the hosiery and hand-knitting trade. These yarns must be light and fluffy. For that reason the dyeing machines must be watched and the processes expedited if the "lofty" hand is to be obtained and felting reduced.

Fastness to light, perspiration, and light washing is usually demanded. For level work, mixtures of dyes having the same exhaust characteristics should be chosen; for better appearing light tests, the mixture should have a tone-to-tone fade rather than less fading with greater shade change. For wash fastness, a gradual weakening of the depth is sometimes of less importance if it keeps its hue nicely.

Yarns that are to be used in bathing suits must be dyed with colors that are fast to sea water, stand exposure to the sun, do not discolor upon contact with perspiration, or bleed onto adjacent light wool and wet cotton toweling. Though darker colors are dyed with chrome dyes, many bright ones are in demand for which the milling type of dye is very suitable.

Carpet yarns must be well penetrated by the dye and colored as level as possible, for when the pile is cut, poor dyeing will show up unevenness to a greatly exaggerated extent. Accurate matching is also required, especially for solid work, as small differences in tone become more noticeable. Fastness to light is the most important requirement, however, and this is sometimes difficult to obtain in pale shades.

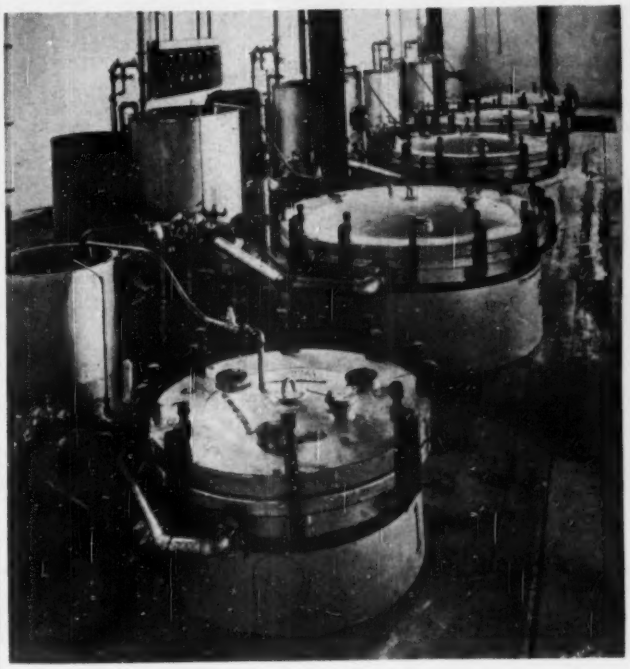
Fastness to urine (similar to perspiration test) is considered essential for quality carpets, while fastness to sea water may be required when the rugs and carpets are used on ships. The sulphuric acid type of dye is usually adequate when chosen with care.

The dyeing of piece goods is the most inexpensive method with which to color wool. Acid colors are used in this process for dyeing ladies' dress goods, the cheaper men's wear fabrics, bunting, etc.

Acid Dyes Classified. From the dyehouse viewpoint, acid dyes may be classified as follows:

Group 1. Sulphuric Acid Colors. About one-half of the 150 to 200 acid dyes on the market fall in this category.

Group 2. Acetic Acid Colors.



Morton System Wool Stock Dyeing Machines

The Morton system wool stock dyeing machine, five of which are shown in the installation photo above, consists of a kier for the wool stock, an unloading grate that is used for removing the dyed wool, a centrifugal circulating pump with direct connected motor, a circulating tank, and necessary piping and valves to provide continuous circulation of the dye liquor.

When the kier is open, the unloading grate is placed in the bottom of the kier and wool stock is loaded into it. When the desired quantity of wool has been placed in the kier, the cover or lid is automatically placed in position and sealed.

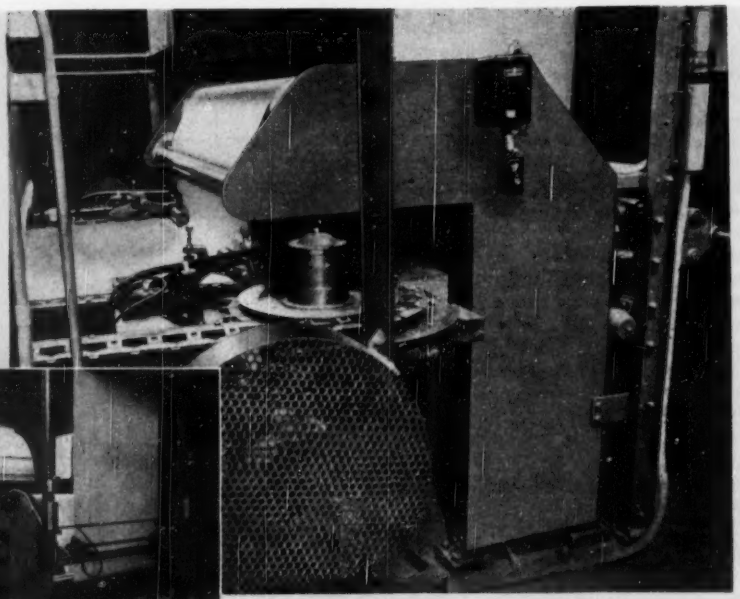
The hydraulic system is then filled with the dye liquor through the circulating tank. The pump circulates the dye liquor from the tank through the piping to the kier.

Before the liquor enters the kier, it is split and forced to flow into the top of the kier on two sides at 80 degrees apart. The baffle and flow plate hold the batch of stock in one solid mass and thus cause the dyebath to flow evenly through the wool from top to bottom. This is a continuous operation until the entire dyeing process has been completed.

When dyeing has been completed, drain valve for entire hydraulic system is opened and compressed air is applied to the machine, entering the machine at the top and flowing out of the drain, thereby removing excess water.

Kier is then opened and wool removed on the unloading grate which is used to convey it to the drying process.

Courtesy, Morton Machine Works



Close-up view of Ripple-Flo Overfeed Device applicable to existing straight-type tenters, either vertical or horizontal.

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*Patent applied for; Registered trade name

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BUTTERWORTH

Alexander Smith Licensed to Install New Harris Color Stripping Process

Alexander Smith & Sons Carpet Company has been granted exclusive license by Harris Research Laboratories of Washington, D. C., to install the new Harris color stripping process in all branches of the wool processing industry.

Under the new method, called "Harristrip," used dyed wools are said to become "almost as good as new" with strength and resiliency unimpaired by the process of removing the existing dye colors.

Dr. Milton Harris, head of Harris Research Laboratories which devised the new method, reports that all basic claims for the process have been allowed by the United States Patent Office.

According to Murray D. Ewing, manager of Alexander Smith's Industrial Marketing Development Division, the carpet company has been using the new process for some time. Mr. Ewing reports that the new color strip method yields substantial savings in wool usage. Wools processed by "Harristrip" are not vulnerable to damage by subsequent dyeing and processing, it is said. It can change "old wool into new" in about one-half an hour through a rapid chemical process used with conventional mill stripping equipment.

Numerous textile firms have already made inquiry to Alexander Smith regarding use of the new process. Mr. Ewing said that these inquiries would be handled as rapidly as possible and that it would take some time to work out licensing agreements and to install the "Harristrip" method in other mills. He said that other companies utilizing the process would do so on a royalty basis. Under such an agreement Alexander Smith will handle installation and servicing of the process, including technical advice on dyeing.

Costs are about the same as those of other stripping processes, according to Mr. Ewing.

Because "Harristrip" does not affect the physical properties of wool and actually enhances the chemical characteristics, the new process will permit wider use of stripped wools in both carpet and wool textile manufacture, he said.

About one-third of the acid dyes are in this group.

Group 3. "Neutral" Dyeing Colors. The remainder of the acid dyes make up this group.

Each color is placed in its respective group because there its properties are optimum for strength and levelness though some can be dyed with colors of the adjacent group. The dyestuff manufacturers break them down into five or more groups, but actually the additional groups are subdivisions of these three.

Dyeing Procedure—Group 1. The dyebath is started with 3 to 5% sulphuric acid 168 Tw., 10 to 20% crystalline or 5 to 10% calcined Glauber's salt (all amounts being based on the weight of the woolen material). Start the dyeing at 120 to 140 F; raise to boil in 30 minutes or less; boil 45 to 60 minutes until exhausted and level. Such dyebaths have a pH of 2.0 to 3.0. More acid can be added later if necessary.

Dyes in Group 1 generally have good leveling properties, are not sensitive to pH changes, have poor affinity when dyed neutral, and distribute speedily. Therefore they are good colors to add to the boiling bath when "adds" are needed. Such "salting" colors are listed in dye books. Their wet fastness is only moderate but many have outstanding light fastness.

As usual there are exceptions to such a general statement. For example, Acid Violet 4BNS (Colour Index 698)—a typical member of this group—can also be dyed neutral and has good wet fastness. The Patent Blues are extremely poor in light fastness. Rhodamine B, though a basic color, can be dyed by this method.

Dyeing Procedure—Group 2. Dyes in this class use 3 to 5% acetic acid (28%) and 10 to 20% Glauber's salt crystals. Start the dyeing at 100 to 120 F; bring to boil in 45 minutes; boil 15 to 30 minutes. Such a liquor has a pH of 3.5 to 4.0.

More acid may be needed later —one sub-group takes from 1 to 5% more acetic acid while another sub-group, more related to Group 1, takes 1 to 2% sulphuric acid. As a class, these dyes do not level as well as those in Group 1, but have superior wet fastness.

Other acids are used from time to time. In lieu of acetic acid, 1 to 3% formic acid (85%) is used. Formic acid is stronger than acetic and more expensive than sulphuric, but some dyers claim better penetration with it. In addition, if cotton or rayon fibers are present, they are said to be less tendered by the formic acid.

Ortho-phosphoric acid (75%) may be used in the same proportion as formic acid. It is cheap and gives good leveling and penetration.

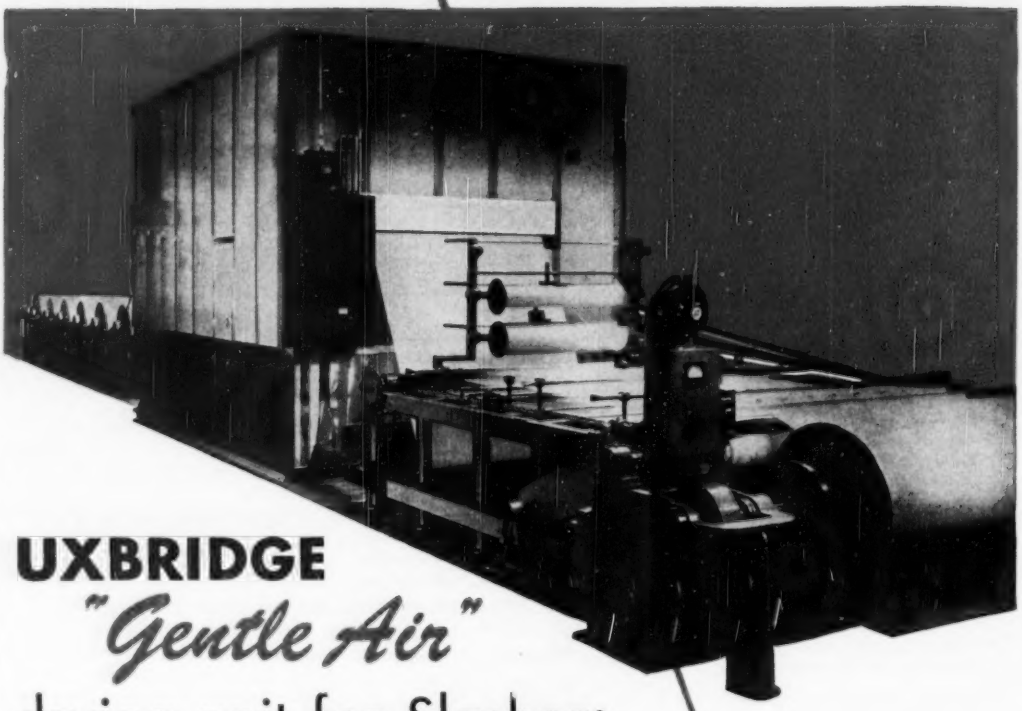
Hydroxy-acetic acid is less expensive to use than acetic acid since only one-third the amount is needed. It cannot be used for the Sulphon Blues, however.

Claims made for both the ortho-phosphoric and hydroxy-acetic acids indicate that the wool is not so harsh on prolonged boiling as when sulphuric acid is used.

Dyeing Procedure—Group 3. These dyes are outstanding in their fastness to wet treatment, but are poor in leveling properties. The dye bath starts at a pH of 5.2 to 5.6 by using ammonium salts which slowly decompose on boiling to slightly more acid conditions (this dissociation has been studied in great detail). The dyebath is charged with 3 to 8% ammonium acetate, or with 2 to 5% ammonium sulphate. Occasionally 10% Glauber's salt crystals are added; however it is best to omit these where there is danger of aggregating the dyestuff in solution.

Starting lower than 140 F affords no advantage. Between this

More warps *and* Better warps



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More warps *and* Better warps

point and the boil, the dyes are sensitive to pH and temperature changes, exhausting rapidly near the critical temperature point. For that reason it is best to maintain that temperature for some time. After the dyebath reaches the boil, the dyeing time is extended to 45 minutes—more time does not help leveling very much. Sometimes 1 to 2% acetic acid is added if better exhausting is needed.

Dyes of the milling or after-chrome type whose solutions are apt to be in a colloidal condition may be processed by the Goodall Method wherein the dyebath is brought to the boil first. Exhaust is controlled by addition of 2 to 4% ammonium sulphate and ½ to 2% ammonia. The steam is shut off; the wet goods are entered, and the temperature drops to about 180 F. Then the dyebath is brought back to the boil during the next 15 to 20 minutes, after which time the dyeing proceeds at the boil.

Improved penetration and levelness result with these more difficult colors—e.g. Erio Chrome Viridone S, especially in lighter shades. The colors are somewhat brighter, show less skitteriness, have better rub fastness and are slightly faster to milling and potting.

A group of acid dyes, known as the Sulphon Cyanine Blues, (Colour Index 288/9) is important enough to deserve special mention. These dyes are cheap, fast to light, milling and other tests. They will not withstand steaming, however, and so cannot be used where decatizing is done.

Many dyers have complained that they are difficult, produce unlevel dyeings, and are likely to turn brown on prolonged boiling. More than usual care should be taken in scouring to remove all grease and soap residues left as a result of improper rinsing or the use of hard water.

Though in the neutral dyeing class, the dyeing is better when the pH is maintained at less than 7.0 by the addition of 2 to 5% ammonium sulphate; 1 to 2% acetic acid will give a better exhaust, but the navies are less bloomy.

The brown coloration is caused by the reduction of the dye by the wool and is easily prevented by the addition of ½ to 1% bichrome to the dyebath. Dyeing at slightly below the boil, at 200 F also helps. These colors (especially the 3R type) are extensively used for men's and ladies' wear, bathing suits, sweaters, and some government shades.

These three groupings are the result of years of plant practice, but from a more scientific viewpoint, they are rather arbitrary.

Exhaust Studies. The exhaust curves for some forty dyes at various pH values ranging from 3 to 7 were studied by the Philadelphia Section, American Association of Textile Chemists and Colorists (*American Dyestuff Reporter*, 1948, pp 149-164). These curves show that dyes are individualists which do not gather around the three pH values most used at present. As a result of this investigation, the dyes were classified by numbers whose values show the similarity or differences between them.

Not only is the degree of exhaust or the color yield at a particular pH important, but the rate of exhaust is also. Perhaps the majority of dyers will agree with Whittaker* that a uniform rate in dyeing is most desirable, but investigation of the aforementioned dyeing methods will show that under those conditions a typical acid dye such as Wool Orange 2G (Colour Index 27) would be 90% exhausted in less than ten minutes, while at pH 7.0 only 20% would be exhausted in an hour. Somewhere between these two extremes are the conditions and a method for controlling the rate at which such a dye transfers to the wool.

Such a method is pH control of the dyebath.

Consider, for example, two dyes that are extremely different in their dyeing properties:

Azo Rhodine 6B (Colour Index 57), a "sulphuric acid" dye, when dyed at a constant pH of 2.6 will exhaust 85% complete in 10 minutes near the boil. If the dyeing is started at pH 6.5 and allowed to drop to pH 5.0 in 30 minutes (where the exhaust test is about 50%) and further controlled until a pH 2.0 is reached, the dyeing is more completely exhausted in a shorter time than with the old method.

Very similar are the results obtained with Alizarine Blue Black B (Colour Index 1085) which is an after-chrome dye usually processed at pH 6.6 where it exhausts about 80% in 10 minutes. The dyeing, however, proceeds at a uniform rate if the pH at the start is at 8.0, and additions made so that the pH at the end is 5.5.

This method requires a constant check of pH during the dyeing cycle, and the use of recently developed constant-reading line-pH instruments is beneficial in obtaining more uniform and level dyeing and the elimination of some of the headaches of the dyer's daily routine.

Synthetic Leveling Agents. Another method of getting better dyeings with acid dyestuffs makes use of certain synthetic leveling agents. Some of these are of the alkyl-aryl sulphonate type; others are of more complex composition.

The theory of the operation is summarized as follows:

These substances are absorbed by the wool. Sometimes they are purposely added to the scour or pre-treatment, and thus they compete with the dyestuff for position on and within the wool fiber.

As the dyeing proceeds, especially if a pH favorable for the dye-wool complex is used, these substances lose their hold in favor of the color. This temporary impediment thus acts as a brake on the dye and results in better penetrated and more evenly dyed goods.

(*Continued in an early issue*)

*C. M. Whittaker, co-author of *Dyeing with Coal Tar Dyestuffs* and author of other textile literature.

Materials Handling Show Set for Chicago, 1951

The fourth National Materials Handling Exposition will be held in the International Amphitheatre, Chicago, April 30 to May 4, 1951, according to an announcement by Clapp and Poliak, Inc., New York, the exposition management.

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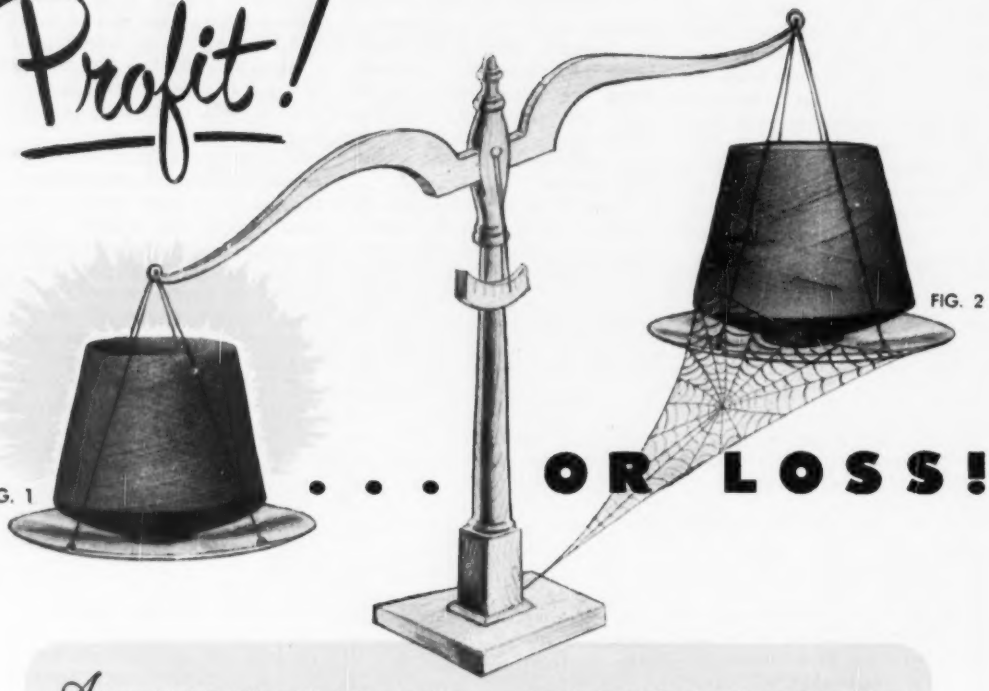

FIG. 1 . . . OR LOSS! FIG. 2

A Foster Model 102 Open Wind Cone (see Fig. 1), or package, may well be the deciding factor in PROFITABLE knitting or package dyeing operations, because it assures free, uniform delivery of yarn on the knitting machine and a minimum of fabric seconds, — or uniform penetration in the package dyeing machine.

A defective cone, (or package) with ribbon wind (see Fig. 2), on the other hand, is practically certain to cause UNPROFITABLE operations. Ribbon wind causes plucks, yarn rolling and yarn abrasion at the knitting machine and uneven penetration in a package dyeing machine.

A RIBBON BREAKER is one of many outstanding features of the Foster Model 102 winder. Through a spring-held split sheave on the traverse drive, the speed of the traverse is varied intermittently about 200 r.p.m., so that the ratio between it and the diameter of the package is always changing, thus avoiding piling of the yarn.

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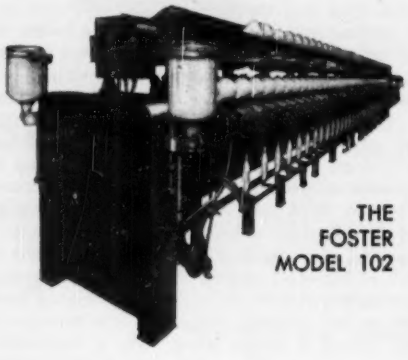

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H. T. Gilbert, Athens Manufacturing Co., Athens, Ga., presided during the carding session of the meeting. Seated, left to right, **John S. Turner,** Bibb Manufacturing Co., Macon, Ga., **T. M. Hampton,** Hillside Plant, Callaway Mills Co., LaGrange, Ga., **George Baker,** Pacolet Manufacturing Co., New Holland, Ga., **H. M. Jackson,** Fulton Bag and Cotton Mills, Atlanta, Ga., **J. A. Byars,** Riegel Textile Corp., Trion, Ga., **R. J. McCamy,** Pepperell Manufacturing Co., Lindale, Ga., and **T. R. Scott,** Martha Mills, Silvertown, Ga.

Georgia Mill Carding Practices

THIRTY-NINE mills, representing 1,720,372 spindles, submitted written answers to questions prepared for discussion before the meeting was held. This report is based on both the open forum discussion and written answers to the questions.

Staff Report

THIRTY-TWO questions on carding and spinning practices were submitted to the mills of Georgia by Textile Operating Executives of Georgia for study prior to the open forum meeting which was held in the auditorium of the textile school at Ga. Tech, Atlanta, Ga., March 25, 1950. John S. Turner, general chairman, presided at the meeting.

The discussion meeting began after a brief introductory address by N. Barnard Murphy, president of the Cotton Manufacturers Association of Georgia. The panel on carding was led by H. T. Gilbert, Athens Manufacturing Co., Athens, Ga., and T. M. Hampton, Hillside Plant, Callaway Mills Co., LaGrange, Ga., led the discussion on spinning.

E. S. Sumner, Monroe Cotton Mills, Monroe, Ga., was elected to the executive committee, replacing R. J. McCamy, Pepperell Manufacturing Company, Lindale, Ga., whose term expired.

Oiling Cotton. Twenty-nine mills reported experience with oiling cotton. The percentage of oil added ranged from .1% to .3%. There was considerable difference of opinion on the point of application of the oil to the stock (see table). Those answering the question agreed that oil on the cotton helps control dust in opening, picking, and carding. Several mills claimed that oiling the stock prevents static electricity, and more short fibers are retained in the stock. A minority of opinions set forth indicated that oil made the fibers more amenable to drafting and other processes.

Some of the disadvantages listed were: additional cleaning required near point of application; too much oil causes sticking of fibers, reduces effective cleaning, causes lap ups and gummed travelers, and grid bars and perforated card screens have to be cleaned more often.

Opening and Cleaning Equipment. In answer to a question regarding opinions on improved types of opening and cleaning machinery, 34 mills submitted written reports, and the opinions expressed differed from one mill to another. The question asked for a description of opening equipment, types of machines used, and the sequence in the operation. Among the answers to this question there was little agreement. Some representative answers reported at the meeting are as follows:

Mill H. Enough blending feeders should be used to keep the load below 200 pounds per hour per feeder. Blending feeders should be followed by feed table, one or two Buckley beaters in tandem, and a Superior cleaner. For a better opening room, we believe a good arrangement is to use a Saco-Lowell No. 11 dust condenser, with Gyrator distributor to pickers, using return air filters and dust removal from hopper feeders.

Our present line of opening equipment consists of four Lummus hopper feeders equipped for dust removal, and these deliver to a feed table. Cotton is taken from feed table by Saco-Lowell No. 11 and feeds Buckley on which it is mounted. Cotton is

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taken from Buckley by another Saco-Lowell No. 11 mounted over a second Buckley. Cotton taken from this Buckley by a third Saco-Lowell No. 11, arranged to feed the Superior cleaner. This machine discharges into trunk line to picker room; cotton handled by a Saco-Lowell No. 12 condenser and a Sturtevant No. 7 fan. A Gyrator is used to feed the two pickers. Return air filters are used in opening room for hopper dust fan and the three Saco-Lowell No. 11 condensers.

We suggest no changes unless it be to arrange to by-pass second Buckley for better grades of cotton. We use cotton ranging from SGO, 1" staple, to Middling, 1 1/16" staple.

Mill F. New equipment is better for running compressed cotton in that it opens the fibers before the picking operation. Our present line of opening equipment is composed of bale breaker, horizontal Superior cleaner, vertical opener, Centrif-Air machine, No. 11 dust extractor, and No. 12 lattice opener. This equipment feeds six pickers.

In making a change we would blend our cotton before cleaning, instead of cleaning before blending, to give the stock a better opening, using the new type blenders. We are using 7/8" and 15/16" staple; Middling and Strict Low Midding grades.

Mill N. We believe the following machines have definite advantages over older types of opening and cleaning equipment: automatic blender and feeders, waste and dust extractors, Superior cleaners. These machines are designed to give a well-opened uniform feed with less dust, leaf trash, and mote particles.

Our present opening equipment includes seven F5 and F2 hoppers feeding two-section Gyrator which feeds two separate lines of equipment. Each line consists of one Lummus mixer, one bale breaker, one lattice opener, and one vertical opener. These two lines feed five one-process pickers.

If possible, we would replace F5 and F2 feeders with the new F7 model, discard the Gyrator, and feed two lines direct with double conveyor. Each of these

Georgia Mill Carding Practices

★ **Using Oil on Cotton**

★ **Opening-Cleaning Equipment**

lines should be equipped with one No. 11 waste and dust extractor; one vertical opener; two No. 12 lattice openers in tandem, equipped with No. 11 waste and dust extractor; one No. 11 waste and dust extractor; and one Superior cleaner. Both lines should feed into one large control hopper. We would change to this line-up because we believe we would get more cleaning and a better blend, resulting in a better picker lap. Our stock is Strict Low Middling to Strict Middling, 7/8" to 1 1/8" staple.

Mill H. New type opening and cleaning equipment does a better job, more efficiently, and at less cost. We tested some improved types of cleaning equipment with 16 bales of cotton divided into three parts. The tests were as follows:

First Test: Cotton was cleaned with a Buckley beater, vertical opener, Gyrator section, and was then run through a two-beater picker which made a 50-yd lap every eight minutes. Records on the test were kept carefully. A chart was made for each lap to check for uniformity; checks were made in the card room; the cloth was sampled; and all test material was properly labeled.

Second Test: Cotton was cleaned and run through picker same as in first test. Then the stock was run through a three-beater picker, making a 50-yd lap every seven minutes.

Third Test: Cotton was cleaned on lines consisting of two No. 11 and 12 waste and dust extractors, No. 7 air filter, and Superior cleaner. This stock was run through both pickers.

Results were better on the first test. Laps were more even, nep count was lower, breaking strength was better, yarn was more uniform, and the cloth from this test had the best appearance. Yarn counts were 16s. The second test showed more neps on the card, less breaking strength in the yarn, and more trash in the cloth. In the third test more neps were in evidence.

At this point during the meeting someone asked if the beater speeds were the same in all three tests. The speaker said all speeds were kept the same.

Fringe Rolls on Pickers. Four mills reported experience with fringe rolls on pickers. One of these stated that better preparation is secured with the fringe roll. According to this mill, the bottom

Oil on Cotton

% Oil Applied	Point of Application in Respective Mills
.3	beater section, intermediate picker
.3	hopper in opener room
.1	bale breaker
.2	opener room
.1	middle beater of picker
.3	bale breaker
.1	pipe where stock leaves No. 12 opener
.3	beater chamber in pickers
.3	F-7 opener feeders
.1	hopper feeder behind Gyrator
.3	blade beater chamber on picker
.3	F-7 feeders
.25	finisher section of pickers
.2	conveyor trough between last two feeders on delivery end
.2	bale breaker
.2	Superior cleaner
.25	hopper in opener room
.3	hopper in opener room
.1	mouth of pipe entering Spirawhirl beater chamber
.1	mixing feeders
.25	F-7 feeders
.3	picker hopper
.18	hopper of F-7 feeder
.2	end of apron on blending feeder
.2	on feed table
.2	back beater on picker
.1	mouth of pipe leaving opener room
.3	feeder hopper in opener room
.2	back beater chamber

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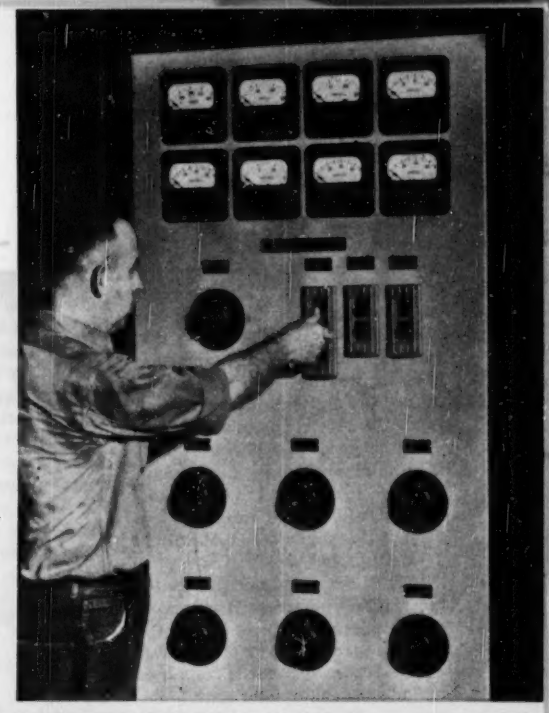
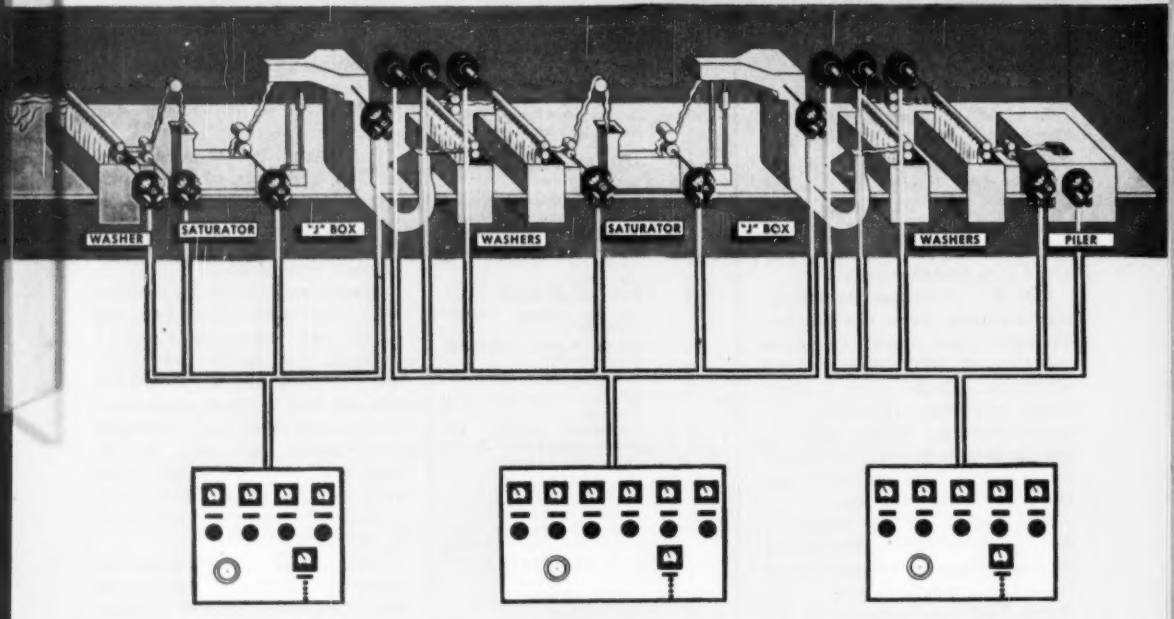


IN THIS CONTINUOUS BLEACHING RANGE DRIVE complete, convenient control is provided by this operator's control station. One of these stations is used to control each section or group of sections in a continuous range system. Features include push-button stations at one point for control of the section, an instrument for indicating the speed of the section, ammeters for indicating load on each motor, rheostats for adjusting these loads, and a master rheostat for adjusting the speed of the entire section.



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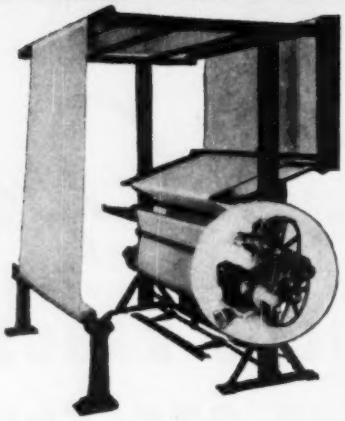


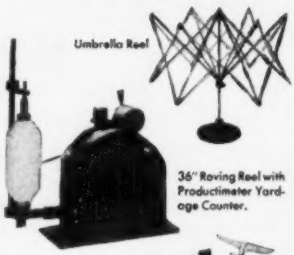
Standard Cloth Inspecting, Measuring and Winding Machine with Fluorescent Lighting Fixture.

LABORATORY EQUIPMENT

Hand Card Winder

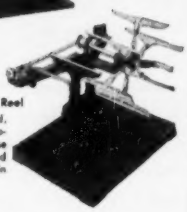
Yarn Evenness Controller

Hand operated with 5 speeds that control yarn spacing. Has adjustable tension stand and supply attachment for bobbins or cones.



Umbrella Reel

36" Roving Reel with Productimeter Yardage Counter.



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Adjustable Agitator Bracket

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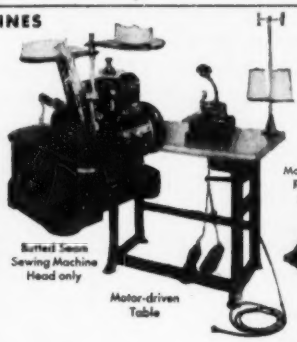

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side of the lap is given the same preparation given the top side of the lap. Lumps which were knocked out of the lap by the beater are caught by the fringe roll and held, thereby allowing more action on the cotton by the beater. The motes under the Kirschner beater contain a minimum of white cotton. The amount of waste taken out in a 24-hour period differs by 4 ounces, the difference being in favor of the beater without the fringe roll, but the waste under the fringe roll contains much more leaf and motes and is greater by volume. The laps do not split on the card, and wear and tear on the licker-in and card clothing are reduced because the lap is better prepared.

Georgia Mill Carding Practices

★ **Fringe Rolls on Pickers**

★ **Life of Card Clothing**

The foregoing conclusions resulted from tests run on the picker equipped with a fringe roll and set to a 34-card gauge, compared with a regular one-process picker not equipped with the

Life of Card Clothing

Mill	Cylinder Clothing (Avg Life)	Doffer Clothing (Avg Life)	Flats Clothing (Avg Life)	3 or 4 Ply Foundation	Flat Chains (Avg Life)	Grade & Staple Cotton	Card Production (lb/hr)
A	34 yr	34 yr	34 yr	4 (cyl) 3 (doffer)	15 yr	7/8"-1 1/16" Best to Low	14
B	variable	———	———	———	———	———	———
C	7.5 yr	7.5 yr	10-12 yr	3 (cyl, dof, & flats)	———	M 1 1/32"	9
D	12-15 yr	12-15 yr	18-20 yr	———	18-20 yr	———	———
F	4-6 yr	4-6 yr	4-6 yr	4	10-15 yr	M & SLM 7/8" & 15/16"	———
G	10 yr	10 yr	10 yr	4 (cyl) 3 (doffer)	10-12 yr	M 1"	9-12
H	12 yr	15 yr	10 yr	———	10 yr	SGO 1"	14
I	12-15 yr	12-15 yr	12-15 yr	3	15 yr	Egypt 1 13/32"	5.5
J	60,000 hr	80,000 hr	80,000 hr	———	25 yr	Amer 1¼" Egypt 1 13/32"	———
L	8 yr	8 yr	8 yr	4 (cyl) 3 (doffer)	5 yr	7/8"-1 1/16"	8-14
N	10-15 yr	10-15 yr	10-12 yr	3	10 yr	SLM-SM 7/8"-1⅛"	11-19.32
O	12 yr	12 yr	10 yr	4	10 yr	SLM 7/8"-15/16"	12
Q	10 yr	15 yr	15 yr	4	7.5 yr	M 1"	11.5
R	15-20 yr	20-25 yr	20-25 yr	4 (cyl) 3 (doffer)	15 yr	SLM 1"	13.8
S	48,000 hr	72,000 hr	72,000 hr	4 (cyl) 3 (doffer)	72,000 hr	M 1"	14
T	7 yr	10 yr	10 yr	———	5 yr	M 1 1/32"	9.5
U	12 yr	15 yr	15 yr	4	10 yr	M 1"	10
V	8-10 yr	8-10 yr	8-10 yr	4	10 yr	Good grade & Staple	9-12
W	7 yr	7 yr	7 yr	4 (cyl) 3 (doffer)	7 yr	———	12
X	8-10 yr	10-12 yr	10-12 yr	4 (cyl) 3 (doffer)	10-12 yr	———	13.25
Y	10-15 yr	20 yr	10-15 yr	———	———	SMLS 7/8" 50% SLM 1" 50% SMG 1"	14.7 8.4
Z	7 yr	9 yr	8 yr	4 (cyl) 3 (doffer)	12-15 yr	M 1" (dyed)	7.5
AA	4 yr	4 yr	4 yr	4	4 yr	M 31/32 (dyed)	14
BB	5-10 yr	5-10 yr	5-10 yr	4	5-10 yr	L grd 1"	16-18
CC	7.08 yr	9.38 yr	10 yr	4	10 yr	M 7/8"	12.5
DD	15-30 yr	15-30 yr	15-30 yr	3	15-30 yr	SGO & M	———
EE	10-12 yr	10-12 yr	10-12 yr	4 (cyl) 3 (doffer)	10-12 yr	SLM 1 1/32"	11.8
GG	8 yr	10 yr	7 yr	———	12 yr	M 1"	8-12
HH	———	———	6 yr	3	3 yr	50% M 1" 50% SLB	12.5
II	8 yr	10 yr	6 yr	4	12 yr	———	———
JJ	15 yr	15 yr	15 yr	———	5 yr	M 15/16"	10
KK	10 yr	10 yr	10 yr	4	———	SLM 1 1/16"	9
LL	5 yr	8 yr	5 yr	4	5 yr	SLM & M 7/8" - 1"	19
MM	6-8 yr	8-10 yr	8-10 yr	4 (cyl) 3 (doffer)	8-10 yr	SLB 15/16"	14

Georgia Mill Carding Practices

★ **Preventing Heavy Picker Laps on Start-Up**

★ **Anti-Friction Bearings on Cards**

fringe roll but also set to a 34 gauge. The blending reserve was moved forward 2½", and the two front fluted feed rolls were discarded. Special pedals were required because the fringe roll would not fit properly under the old pedals.

Another experience indicated that the fringe roll improves the evenness of the laps slightly, but it takes out better quality waste. In this instance, when installing the fringe roll, it was necessary to change the cheeks, reset the beater to the fringe roll, and move the grid bars forward.

Heavy Picker Laps on Start-Up. Typical comments regarding what can be done to prevent the first few yards at the start of a picker lap from being heavy are as follows:

Start the lap to wind tightly and smoothly around the pin, and lower the calender racks immediately to improve this condition. Apply oil to lap pins to start the lap on the pin. [See TEXTILE INDUSTRIES, March, 1949, page 179, for method of application of oil to lap pin.]

Run the lap pins over an oil pad before placing them on the lap. This causes the first part of the lap to stick to the pin and gives a more uniform weight in the first yard.

A slight improvement can be made by using a wick to oil the lap pin to get a better start-up, but the heavy place on the screen, caused by the fan running with the picker stopped, cannot be eliminated by any known method. Lap uniformity can be improved by doffing and starting picker promptly.

More uniform laps can be made by installing a chain drive on lap calender rolls so that entire front of picker starts and stops at the same time.

N. Barnard Murphy, president of the Cotton Manufacturers Association of Georgia, praised the spirit of the open forum discussion meetings.

Anti-Friction Bearings on Cards. Mill men were asked to give their experience with ball bearings on cylinder bearings, licker-in bearings, and comb boxes, citing advantages and disadvantages.

In answer to this question, 15 mills had insufficient experience to say whether or not they liked ball bearing cylinder bearings. Two mills liked ball bearings on card cylinders, and four mills did not like ball bearings on the cylinders. Ten mills liked ball bearings on the licker-in; one mill did not like ball bearings on the licker-in; and 10 mills had insufficient experience to express an opinion. Five mills reported satisfaction with ball bearing comb boxes; 11 mills lacked experience with ball bearing comb boxes; and three mills were not satisfied with their ball bearing comb boxes.

No one could report the life of ball bearing comb boxes, but one opinion stated that the life of ball bearings was longer than the life of plain bearings. Another opinion placed the expected life of ball bearings at two years.

Seven answers to the question affirmed that a changeover to ball bearings was justified; six mills asserted that a changeover was not justified; seven mills had no opinion; and one mill was in favor of a changeover to oil-impregnated metal bearings. Six mills had good results with oil-impregnated metal bearings; 14 mills had no experience; and one mill had unsatisfactory results. In most instances, mills using oil-impregnated metal bearings recommended oiling the bearings when cards are ground.

Comments on this question during the meeting are as follows:

Mill C. We have no ball bearings on cylinders. 16 cards are equipped with ball bearing lickers-in, and we have one ball bearing comb box. The ball bearing lickers-in cause a little trouble and consume some time in cleaning shrouds or replacing lickers-in. We do not know the life of these bearings. Plain bearings have given us no trouble, and we do not think a complete changeover is justified.

In our plant, doffer bearings are milled out and bushings are installed by our mechanics. The cost is $2.00 to bore out the old bushing; $1.00 for the bushing; making a total of $3.00, cost of the bearing. This figure compares with $30.00, the usual cost of a new bearing. The bearings are oiled once each week, and no grease is used. These installations are better than an original installation with cast iron journals in cast iron bearings. When replacing the cast iron installation, both the journal and bearing have to be replaced.

At this point during the meeting, someone asked if this mill built up their journals. The speaker replied that usually the journals are not built up, but some journals are replaced where it is found necessary. Some of the journals were found to be scored slightly, but if the journal fits snugly in the bearing, no replacement is made. The tolerance allowed is .005, and the standard diameter is maintained on the journal. This plant does not change to undersized journals.

(Continued next issue)

CALCO dyelines

No. 14 of a series

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CR. This green is generally used for pastel shades such as nile greens, where maximum brilliance is required.

Calcocid Milling Fast Green CR is also a standby in the knitting industry for bright shades in the Spring line of sweater yarns. Its use in hand knitting yarns is said to be a sales-builder because of its strong feminine appeal.

Long a favorite with dyers of worsted bathing suit materials, this dye is adding color to apparel worn at beaches and resorts throughout the country. In addition, it is the basis for many of the lovely light green shades seen in ladies' dress and cloaking fabrics.

Calcocid Milling Fast Green CR is a good working dye, retaining its bright shade when used in combination with chrome dyes applied by either the meta or topchrome methods. It produces brilliant green shades which are generally unobtainable with other dyes.

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A Good Economical Black

For producing relatively cheap black and navy shades with very good fastness to light, washing and chlorine, the Calcoloid* Blacks (BBD Double Paste, Double Powder, and BBD New Double Paste) are recommended.

Calcoloid Black BBD New Double Paste is a special type requiring lower concentrations of caustic soda and sodium hydrosulfite than the other two types. This is a decided advantage in stock, package and beam dyeing, where undue exposure to air is avoided during the dyeing process. Full black shades are produced by aftertreating with nitrous acid or sodium hypochlorite. Direct dyed black shades, which do not require aftertreatment, are frequently dyed with combinations of Calcoloid Black BBD, Calcosol Dark Blue BO, Calcoloid Golden Orange G or Golden Orange RRTD.

Fast, economical navy shades can be produced by combining one of these blacks with Calcosol* Dark Blue BO Paste or Calcosol Navy Blue Paste.

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The versatile Calcotone* Pigment Pastes are specially prepared aqueous dispersions of carefully selected organic and inorganic pigments. They have found a wide variety of uses: for printing of textiles using water soluble binders; for coloring of leno bags and lightweight fabrics such as laces and curtains in conjunction with resins for fabric stabilization.

At present, the Calcotone line of pigment pastes includes the following: Calcotone Yellow G; Yellow M; Orange R; Orange 2R; Scarlet Y; Red PR; Red MB; Red B 80%; Red 3B; Pink FF; Green G; Green M; Green B; Blue G; Violet B; Black; White T.

For the Textile Bookshelf

Calco Technical Bulletin No. 807—"Studies On Wool Dyeing: Effect of Metals on Tippy Dyeing" by Henry E. Millson. Discusses problems encountered in dyeing wool with chrome colors, particularly shade changes when a dye capable of metallization is reacted with different metals; also discusses influence of impurities in plant water on shade variations.

Revised-Calco Technical Bulletin No. 761—"Descriptive Index of Calco Technical Bulletins"—abstracts all bulletins published to date. Helpful cross-index. Send for your copy.

Calco Technical Bulletin No. 777—"Coloring With Resin-Bonded Pigments" offers a complete description of the methods recommended for applying Calcotex Resin-Bonded Pigments on cottons. Contains historical and general background material; also several full color pages illustrating the beautiful color effects possible with Calcotex colors on cotton percale, flannelettes, plissé, sportswear, shirting and specialty items.

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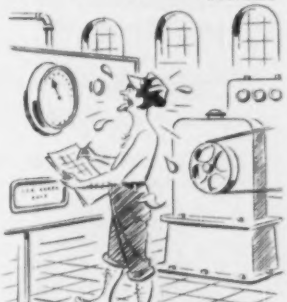

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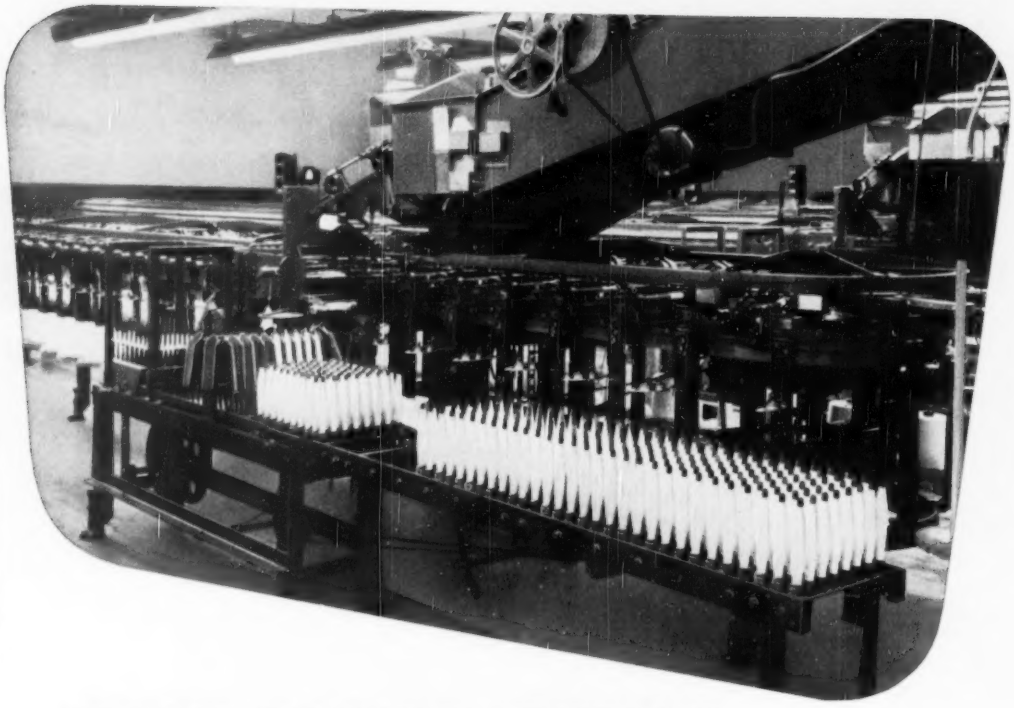

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ABBOTT MACHINE COMPANY
FACTORY AND MAIN OFFICE:
WILTON, NEW HAMPSHIRE
SOUTHERN OFFICE: GREENVILLE, SOUTH CAROLINA

The Government as a Business Manager

By RINGOLD ARDEN

FOR ABOUT 16 years, the Federal Government has been getting deeper and deeper into business management, if you can call the frightful mess of government participation in business affairs "management." One of the worst examples of the impossibility of government managing anything efficiently is the way the so-called government experts have gone about the business of trying to regulate the prices of farm products.

During these 16 years, the federal government has poured countless billions of dollars into a scheme for raising the cost of living to the general public, and soaking the already over-burdened taxpayer in order to encourage farmers to raise more stuff than is needed, and in fact, more stuff than the federal government can find room to store.

The textile industry has been very grievously affected by this fantastic adventure in what its proponents claim is merely an attempt to keep farm incomes on a parity with the incomes of the urban population. The prices of cotton, wool, and starch have been maintained at artificial levels so that the cost of clothing and the thousand and one items of household equipment produced by the textile industry have been kept too high for comfort.

The enormous stock of government-owned cotton, and the high government-maintained price of cotton, are like a sword of Damocles suspended over the cotton textile industry by the single tenuous thread of government control of prices.

Last spring when cloth and yarn buyers felt that there was a slight chance of the government changing its policy with regard to cotton price supports, there was a general cessation of purchasing, and a first - class recession throughout the entire cotton textile industry. The slightest suggestion of any intention on the part of the federal government to revise its cotton price control downward would precipitate another recession in the industry this spring.

When the cotton planting season is over and it is known how much acreage is put to cotton, and there is some idea of the condition of the crop, if we have a large acreage and good crop condition there is certain to be pressure brought on the government to drop the price of cotton to a somewhat more realistic basis than the present price.

During the past two years, the government has taken over around one-fourth of the cotton crop, and much of this surplus cotton could be disposed of to ECA. That agency has indeed been a happy dumping ground, where the national administration could get rid of some of its embarrassing farm surpluses, but ECA will not keep up forever—we hope. When that dumping ground is no longer available, where the staggering losses of the federal government in its crop price support program can be hidden from the eye of the taxpayer, the cotton will simply accumulate in warehouses or in piles on the ground, and presumably the government will be reduced to the ridiculous expedient of burning it up, as it has been burning potatoes and other annoying property for which no means of disposal can be found.

This ECA cotton has produced some peculiar effects. We know of one North Carolina yarn producer who had been selling yarn abroad, and suddenly discovered a Continental competitor who was offering the yarn at a price below the cost of cotton to the North Carolina mill. The manager of this North Carolina concern gloomily remarked that if the government would give him the cotton, he could sell the yarn at that price too. How much of this gift cotton is finding its way back into the United States could never be learned, but undoubtedly some of it, and perhaps a good deal of it, is in all of the imported cotton textiles that have come to this country during the past two years.

This whole farm price support project really means that the government is in competition with industry. If a cotton mill wants to buy cotton, it finds that the government is competing with it for this cotton, although the government doesn't want the cotton, and has to go to a great deal of expense to keep it out of the market. If a candy manufacturer wants to buy peanuts, he finds the government competing with him for these peanuts, and willing to drive the price so high that it is practically beyond the reach of the candy manufacturer.

The government now supports the price of peanuts at about four times what this was just a few years ago, and at about three times what the peanuts are probably worth in a competitive market. The peanuts are bought at a price set by the government in its role of manager of the peanut industry, and then all the peanuts that can not be sold at this absurdly high price are sold to oil mills at what the peanuts are really worth, and the taxpayer makes up the difference. We are informed by a peanut expert that the admitted losses on this price support venture for peanuts only represent about one-fourth or one-fifth of the actual loss, since the rest of it is borne by ECA. Whether the ECA countries want peanuts, or like peanuts, does not prevent our government from forcing them to take peanuts as part of their ECA benefice.

This price support racket as ap-

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plied to potatoes has received wider publicity than any of the others, simply because some of the operations have been more spectacular, and have made readable copy for newspaper columnists. Everybody eats potatoes and knows that they cost plenty at the grocery store. When the government will buy potatoes in Maine for about three dollars a bag, and ship them out to Chicago and sell them for a cent a bag to a hog raiser, who then empties the bags and sells these for ten cents apiece, this makes very readable copy for a housewife who is paying a good price for potatoes.

When, in one year, 31 potato farmers in one county got government checks ranging from $100,000 to $450,000 each, while working men were clamoring for higher wages because food cost too much, a newspaper writer could make a good front-page story out of any such weird tale. The truth of the matter is that the potato racket represents only a small part of the government's involvement in keeping the farmers happy between elections.

The fictitiously high price of cotton is keenly felt by the cotton mills, and the fictitiously high price of potatoes is felt by their employees. At every turn you can find somebody who is paying too much for something because the national administration is anxious to buy votes with price supports. When a government gets into business, the result is certain to be a mess, because the one acid test of capacity for managing a business can not be applied to government operation. This test is the ability to make a profit.

A government agent in business never has to make a profit, and seldom expects to. Every government agency entrusted with the management of some business therefore gets deeper and deeper in the hole, year after year, and if it doesn't appear to be getting deeper in the hole this is invariably due to some piece of good luck beyond its control, or to some juggling of the books, as in the case of dumping commodities at a terrific loss into the ECA pot, where the loss will not show.

During the war, TVA seemed to show a handsome profit, and ardent admirers of this government venture in business pointed with pride and joy to this alleged profit. There was of course no profit—the government was merely trading pockets with its money. The war was the happiest of all the happy dumping grounds that could be invented. TVA could sell its current to some war industry at a price which would make TVA appear to make money and the loss chargeable to the war would be questioned by practically no one.

The same thing applied to crop surpluses during the war. Because the government had an almost unlimited kitty for war purposes, it could buy up what might otherwise have been crop surpluses, and distribute these products all over the world at a rate sufficient to cause an actual shortage.

The federal government has, of course, no right, either moral or constitutional, to maintain these price supports on anything. It would be no more illogical or unconstitutional for the federal government to guarantee a satisfactory income to textile mills than to cotton or wool growers. It would be no more irrational for the government to guarantee a satisfactory income to the oil companies than to the wildcatters who find oil wells. It is just popular for the government to go through the motions of taking care of the general public, while it would be unpopular for the government to take care, in exactly the same manner, of large corporations temporarily dissatisfied with their earnings.

The government is now so hopelessly involved in these price support ventures that it is going to be an Augean task to clean up the mess and get out of the price support business. It would be such a mess, in fact, that it is quite likely that the government will never get out of the price support business until it goes completely bankrupt, which it can most emphatically do, in spite of the fatuous hopes of people who believe that economic laws can be repealed by Congress.

If the government does stay in the price support business, we are going to kiss our famed free enterprise system goodbye, because the government can not keep on buying and destroying everything that millions of people are spurred on to produce by agreeably high prices. We will have to get back to the doctrine of the early New Deal days of "Prosperity through Scarcity." We will be committed to high prices for low production, because the only way you can keep prices up is to make things scarce. Even a freshman in a school for the feebleminded ought to be able to figure out what will happen if we deliberately make everything that everybody wants scarcer.

The most obvious result of such a policy of production restriction would be the hand of some petty tyrant resting on the shoulder of every independent producer. The entire American economy would have to be frozen into a fixed channel.

If every farmer had a quota, then there could be no new farmers, and the ones who were graciously permitted to continue farming would do so under the rigid controls of a bureaucracy.

We are right on the brink of such a condition now, as the surpluses pile up and the frantic bureaucrats realize that there is nowhere to pile them. Last year vast quantities of wheat, corn, and other grains were piled in heaps in the field because there was no elevator space. That these heaps of precious foodstuff might completely spoil, distressed practically no one, because most of them belonged to the government.

A recent editorial in a Florida newspaper reminded the orange growers that their failure to get government price support for oranges was the best thing that ever happened to them. Lacking a subsidy, they had used their ingenuity instead of leaning on the government, and had developed the frozen orange juice business, which tremendously increased the consumption of oranges and added to the wealth of the state.

Maybe the removal of other government props might have as salutary an effect as the failure to provide that one.

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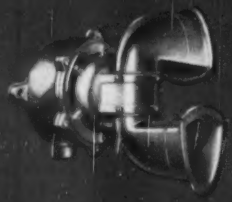
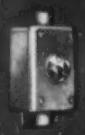


Type WH Raintight Horn with Double Projector



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surroundings where a constant hum or whine is present but a bell could readily be heard. A bell would be inadequate in surroundings where the noise is produced by hammering on metal but a horn would give the required contrast.

Careful consideration should also be given to the number of signals required. In general, much better coverage is obtained by even distribution of several low output units than by one or two high output units. On the other hand, a high powered unit is necessary when the sound must be projected a considerable distance from one location.

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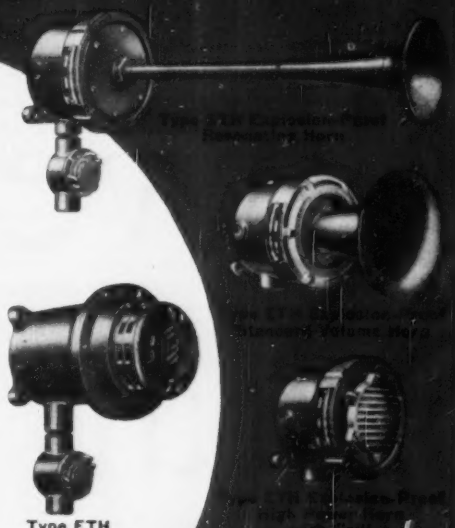

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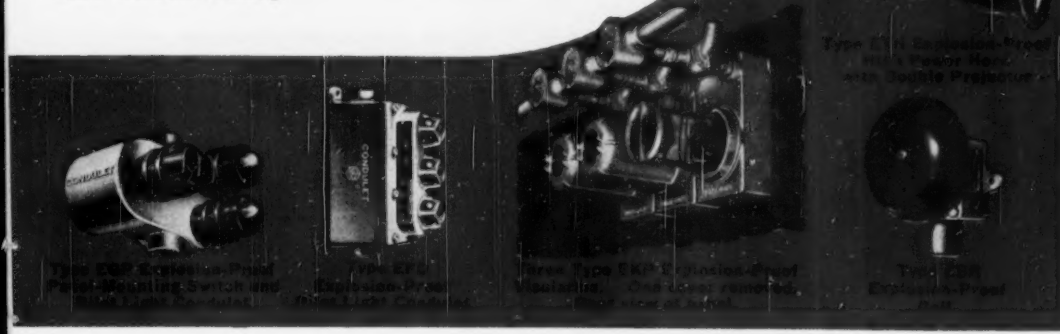
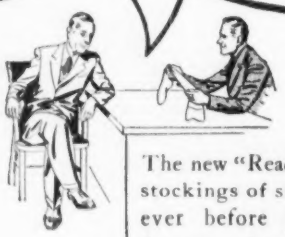


but their costs are lower than ours



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- **fewer machine shutdowns**
- **better quality hosiery**

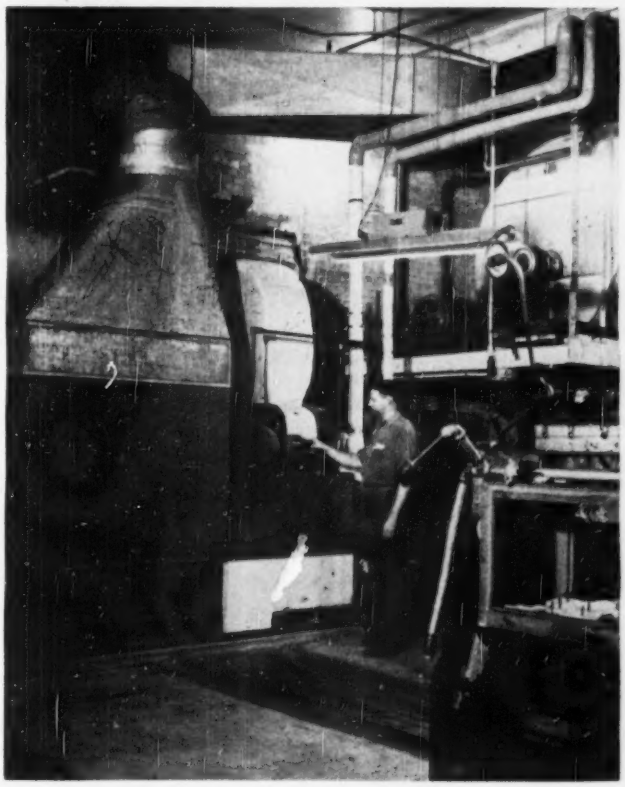
SEVERAL years ago the full-fashioned division of Charles H. Bacon Co., Loudon, Tenn., was having considerable difficulty in trying to operate satisfactorily when oftentimes the relative humidity was 70 per cent. The mill is situated near a river, and during the summer months the high humidity caused the size to strip off the nylon yarn as it was being knit.

Troubles Caused by High Humidity. The size got on the needles and machine parts, causing press offs and bad work. In addition, the humidity made it necessary to clean and adjust the machines frequently. The yarn oftentimes stuck to the eyelets and carriers as it moved from the cone to the needles.

After a study of possible corrective measures, a dehumidifier was installed and tied into the existing air conditioning system. The installation was placed in operation during 1948, and operations have subsequently improved.

There were two objectives in making the change: (1) to reduce the moisture content of the air to prevent size from stripping off of the nylon yarn, and (2) to maintain constant conditions to aid in controlling the length of stockings. Usually, the relative humidity is kept between 50 and 55 per cent for running nylon in

One of the "Kathabar" dehumidifier units tied into the air conditioning system at Charles H. Bacon Co. At left may be seen the dehumidifier chamber; man is standing by air-intake. Dehumidifier unit joins existing air conditioning system by duct shown at top.



First in "recoverability"

There's a reason why Textile Spring-Beard Needles are outstanding for "recoverability." Every dimension—length, width, thickness, taper—is carefully calculated in direct relation to the resiliency of the steel and the job the needle must do.

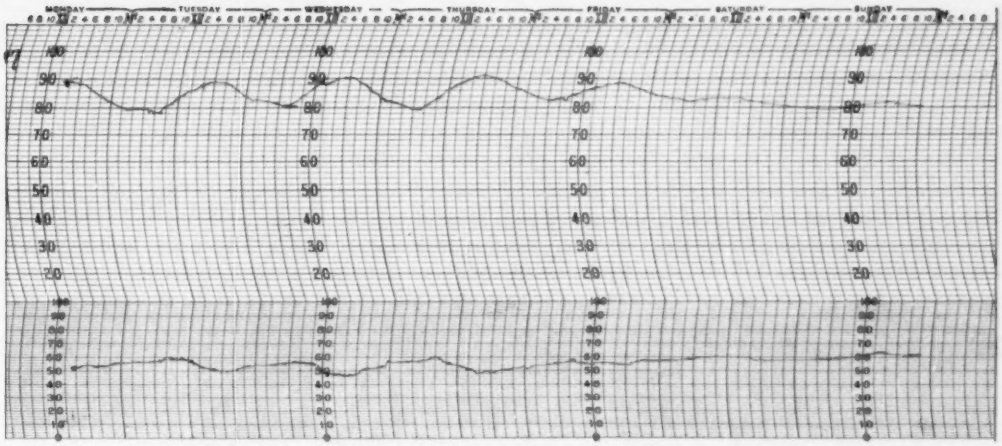
Every Textile Spring-Beard Needle is exactly the same in *performance* as the needle that comes before it, and the needle that goes after it. Textile's quality controls—automatic and electronic—are the reason. Check the results in better fabrics, increased profits.

TEXTILE MACHINE WORKS, READING, PENNA.

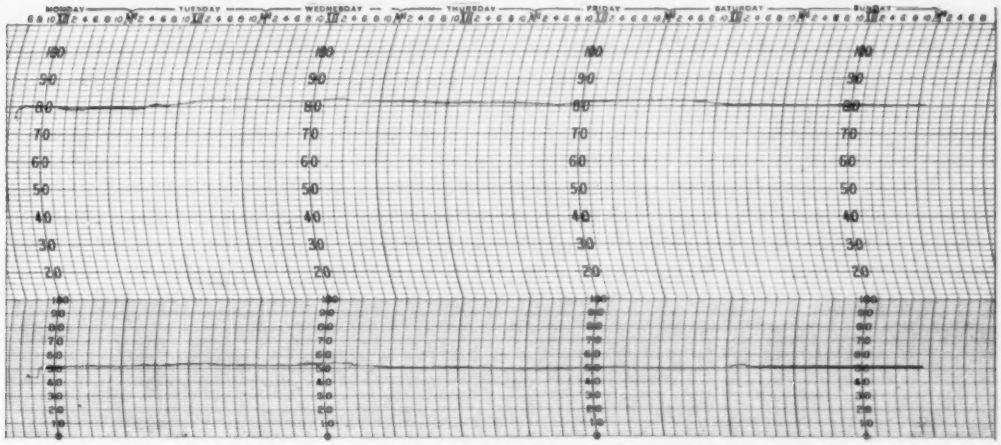
Textile

SPRING-BEARD NEEDLES

For Full Fashioned and Warp Knitting



Top, a representative graph recording showing the variation in temperature and relative humidity before the dehumidifier was installed. The graph was recorded during the latter part of 1947. Bottom, a graphic record made during the early part of 1948 after the dehumidifier was placed in operation. Note the uniformity in both humidity and temperature as compared with the 1947 record.



full-fashioned mills.

Need for Controlled Humidity. Excessive humidity allows nylon to stretch more, and a variation of the moisture content reduces the effectiveness of established methods for controlling uniformity of loop formation and length of the finished stocking. If the temperature varies much above or below 78 degrees F, the long narrowing goods and picot bars contract or expand due to the temperature change. This condition causes the points and needles to get out of their correct relative position. Consequently, narrowing holes, imperfect formation of loops or stitches, and many other contributing factors make stockings for the menders.

The adjustments on full-fashioned machines are fine, and any change of more than three or four degrees temperature adversely affects operation of the entire machine. The machines function better and make better quality hose if the temperature is maintained constant. The effect of humidity on the nylon is the other major factor which should be controlled for good production and quality.

Now that the dehumidifier is in operation, the management at Charles H. Bacon Co. reports better control of stocking length, less trouble with size stripping from the nylon, better operation of machines, and more and better quality production.

Description of Dehumidifier. Three "Kathabar" dehumidifiers

Milady is particularly aware of the factors that make hosiery beautiful . . . the smooth, smoky-dull allure that attracts eyes leg-ward. Practical, too, she's grateful for the added resistance to runs, pulls, snags and spots that good hosiery provides . . . invariably she comes back for more!
Hosiery makers know, of course, the important part that **Dura Beau** *Finishes play in making fine hosiery more DURAble . . . more BEAUtiful!*

Dura Beau TEXTILE FINISHES

Reg. U. S. A. and Canada

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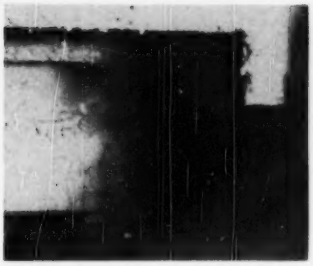
SERVING THE TEXTILE INDUSTRY SINCE 1907



Cooling coils and spray nozzles in dehumidifier viewed from access door while machine was not in operation. Spray nozzles are arranged in rows to spray downward, and air flows toward bottom of the unit.

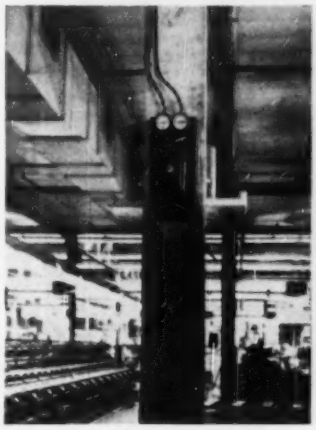
made by the Surface Combustion Corporation, Toledo, Ohio, are used in the two buildings housing the full-fashioned equipment.

Air is taken into the Kathabar unit through an individual duct from outside the building. The raw air is passed through a filter to remove foreign particles. Then the filtered air enters a chamber which is equipped with nozzles to spray the air with a chemical compound called "Kathene." The chemical compound absorbs and removes the moisture from the air.

A coil element is located in the lower part of the spraying chamber. The coils are cooled by water passing through them, and the chemical spray is cooled as it falls on the coils. The amount of moisture removed from the air, passing through the chamber, depends on the temperature of the chemical compound, which in turn is controlled by the volume of cold water passing through the coil element. The flow of water through the coil is controlled by a regulator which is tied in with an adjusting mechanism located in the knitting room.

Chemical Re-used. The chemical compound in the Kathabar unit is re-used continuously. When water accumulates in the absorbing chemical, the compound is circulated through another compartment where steam coils remove water from the Kathene. The steam coils are controlled by the liquid level in the reservoir. When the liquid level rises in the reservoir, a mercury switch is activated, thereby releasing steam into the coils to take water out of the chemical. A fan in this chamber blows the moisture through a duct which runs to the outside of the building.

A fan in the back end of the Kathabar draws the dehumidified air up through a duct and blows it into the central station spraying



Hygrostat for controlling the amount of moisture taken out of the air by dehumidifier. A key is used to regulate this instrument which seldom requires adjustment once it is set correctly. Located on the same post behind the hygrostat is an instrument for recording the temperature and relative humidity.

chamber where the desired amount of humidity is added.

The Kathabar unit is needed only when an excessive amount of moisture is present in the air. The conditioned air is handled by the air conditioning system after the dehumidifier serves its purpose.

No Hosiery Shortage Foreseen

A feature of interest this spring in retailing experience in the women's field of merchandising is the greater attention given to millinery, in preference to hosiery, lingerie, suits, coats, etc., and this trend is reported to have reached the scope where it seems to lessen the probability of an early return of the predominance heretofore accorded by women to stockings as a leading item of their personal adornment.

Full-fashioned nylon stockings, it is now acknowledged, have become a retail "knock-about" as to prices. In nearly any shopping center in the country, according to this theory, price cutting has lowered very presentable hosiery into the 60-to-70-cent-per-pair price range. Nylon hosiery thus priced has even fallen below the category of department stores' "loss leaders." Tobacco and chain drug stores now feature them, at around an average of 65 cents per pair, with the seller's assertion that they are stockings of a certain denier and gauge.

Shipments of full-fashioned nylons, according to latest available official information, during early months of 1950, were at the monthly rate of over twenty per cent more than during the like period a year ago. It is explained there can be little doubt this growth of mill deliveries, as against the effect of nylon yarn allotments to the knitters, shows: (a) the latter already owned plenty of nylon yarn; (b) retail inventories of nylon hosiery remain large, both as to units and dollar values; (c) price-cutting by knitters, wholesalers, and retailers probably will have to be extended well into spring; (d) nylon stockings are very unlikely to regain the prominence they enjoyed during the early postwar years.

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Under all conditions the proved performance of Tycol lubricants more than meets their recommended service.

Rigidly controlled and tested during manufacture . . . and refined from the highest grade crudes, Tycol oils and greases are known for their *UNIFORMITY within each classification — from the first drum to the last.

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REFINERS AND MARKETERS OF VEEDOL — THE WORLD'S MOST FAMOUS MOTOR OIL

Auxiliary Brake for S&W Machines

This item was submitted in a recent "kink" contest
For details of current contest, see page 163

EDITOR TEXTILE INDUSTRIES:

An auxiliary brake for S&W machines was recently placed in operation in our knitting room and has proved to be helpful. The regular brake sometimes becomes oily and often slips when the atmosphere becomes too humid. The additional automatic brake was devised to help eliminate slipping if the regular brake fails to do the job.

Parts of the assembly are shown in the accompanying sketches. Part E is made of a 10/32 steel screw 1½" long. One inch of thread has been removed from the screw.

When assembling the parts, put the screw into part D, and install a nut on the threaded portion of the 10/32 screw. Place a washer against the nut and then install a spring ¾" long (coil about ⅜") for good tension. Next install another washer, and leave 3/16" of screw end free to fit into slot at bottom of part B. This arrangement will permit adjusting the tension as desired.

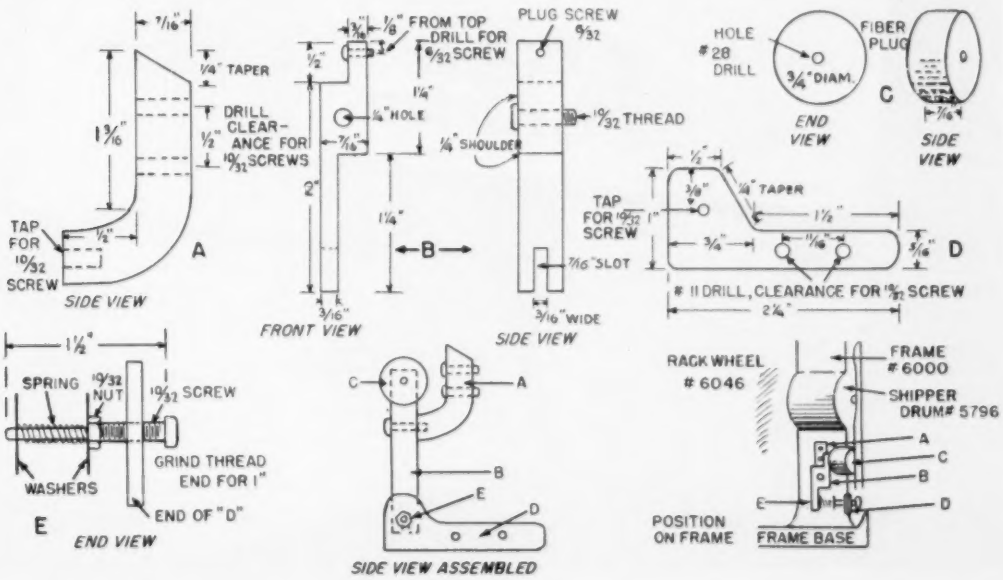
The plug may be made of Bakelite or other similar material. This part can be made square if round material is not available. The size may vary according to individual requirements.

Part D should be installed on the base of the frame, and it may be necessary to file a portion of the frame flat to allow the part to fit flush. It must fit flush to obtain the advantage of full adjustment.

Part B should fit freely on part A to prevent any tendency to shift brake pressure on shipper drum. When adjustments are made, be sure that the shipper drum is on the shaft as close to the frame as possible and locked tight by set screws. If shipper drum is loose it will soon become too far out of position because of combined pressure from the auxiliary brake and regular brake.

The top portion of D above the adjustment screw hole may be cut lower if necessary so it will not interfere with the shipper drum. The attachment will not interfere with proper machine operation if it is installed correctly, and it should prove helpful to fixers working on S & W machines.

CONTRIBUTOR No. 8206



Get more production, lower costs on many fabrics

with the Kidde Knitter!

The Kidde Knitter can produce a great variety of fabrics, including those in the illustration, at much lower costs than prewar Raschel machines. On most fabrics or patterns the production rate of the Kidde Knitter is double that of old machines. Generally one operator can watch four machines.

Rigid, precise construction and an improved needle bar motion are features of the Kidde Knitter. An improved chain drum drive permits pattern work to be run without sacrifice of machine speed.

Why not let the Kidde Knitter step up your production and step down your costs? Write today for complete information.

KIDDE MANUFACTURING CO., INC.
BLOOMFIELD, NEW JERSEY

Knitted Outerwear Mill Profits from Systematic Maintenance

Staff Prepared

EXCLUSIVE

LESS SECONDS due to oil stains are occurring at Kingston Knitwear Company, manufacturers of men's and boys' sweaters in Kingston, N. Y. After more than half a dozen varied but futile attempts to cut down damaged goods losses, a commercially feasible method was found.

The plan is to eliminate oil spots at the point of origin. It calls for knitting run-outs from waste yarns during daily housekeeping, lubrication, and maintenance periods in the circular knitting department. Generally responsible for knit goods soil, these functions are now confined to the last hour of each shift during which time waste yarn is substituted for first class yarns on all knitting machines.

In addition, chances of dirt accumulation have been reduced by converting all machines to individual drives and installing a false flat ceiling of Celotex.

At the Kingston plant, the day shift cleans up from 5 to 6 P. M. while the night shift cleans from 6 to 7 A. M. On Saturdays, run-out yarn for the clean-up periods are backwound on coners from waste and surplus cones.

During these designated times, ceilings, floors, and machines are systematically cleared of lint with an air hose. Simultaneously, machines are inspected, adjusted, and lubricated. Resultant dirt and oil contaminants are absorbed by the knitted run-outs.

After the clean-up period, cloth and run-outs are cut off the machines, and first class yarns are transferred back to the yarn delivery stands. About one-fifth of the actual cost of surplus yarns consumed in the production of run-outs is returned in sales as wiping cloth.

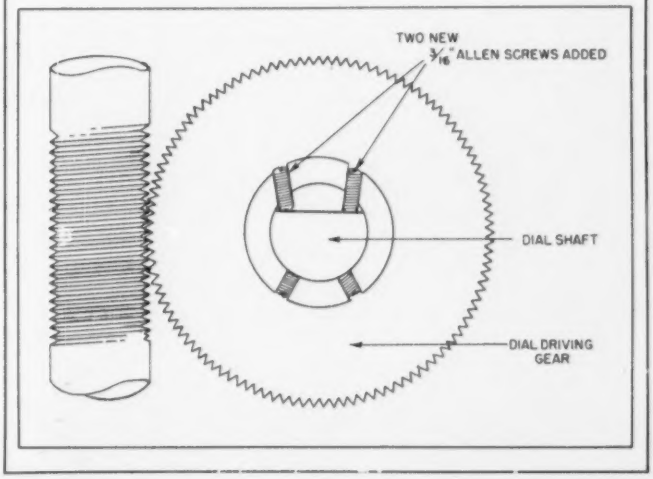
This procedure has made it unnecessary to scour or dry clean oil spotted goods; a measure which hadn't proved entirely satisfactory. Discoloration usually remained in goods knitted from vat dyed yarns, while in the case of yarns processed with dyes of lesser fastness, there was some loss of color.

Besides savings derived from averting oil removal treatment, production of firsts has risen significantly.

POSITIVE ADJUSTMENT FOR LOOPER DIAL

When it is necessary to time the dial with the needles on a Sotco looper, especially on fine point work, a positive adjustment is needed. A satisfactory adjustment can be made by grinding a flat place on the dial driving shaft so that two Allen screws can be positioned to engage the shaft as shown in the sketch. The flat place should be ground about ⅓ the diameter of the dial driving shaft and approximately ½-inch long. By alternately tightening one and loosening the other with a wrench, a positive adjustment can be made.

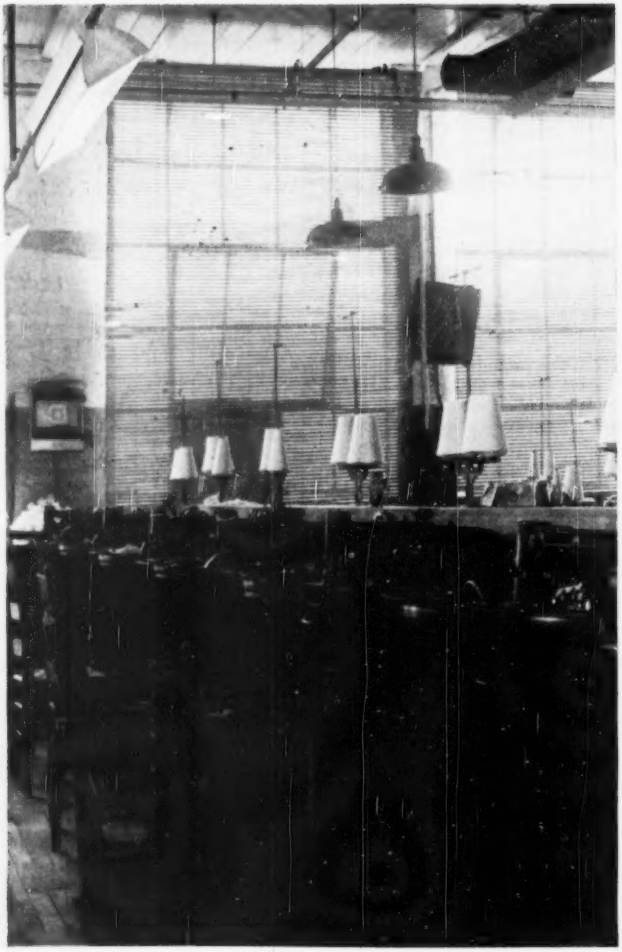
CONTRIBUTOR No. 8181.



Knitter Hints No. 31

Prevention of Pull Threads

All CHAIRS should be COVERED, thus eliminating a dangerous source of pull threads.



Export Future Still Cloudy

The constantly shifting nature of U. S. exports of textile-garment materials and finished goods since the war is shown by a breakdown of the list of foreign lands to which our exports have been shipped from year to year. In fact, it is claimed, a country that has been a good customer for a more than monthly period is frequently unknown in some of our export categories.

Knitwear authorities explain that a large part of this can be blamed on the world monetary situation, wherein lack of dollar exchange presumably prevents foreign buyers from more consistently covering their needs in the United States.

Accordingly, it is conceded, any guesses as to the outlook for permanent markets for our exports are premature. It is stressed that this has been a most persistent drawback for several years, and until a firm pattern of international monetary valuations can emerge, it will continue difficult to say that our exports can be sustained at any particular total, because key markets of one year can show serious decline the next.

Knitters who did a satisfactory trade with foreign customers in prewar times, often look back with regrets. Total exports then were less than in a couple of the postwar years, but the business was of a much more dependable character. In the 1920-1939 period, it was known that certain foreign countries took the bulk of our surplus textile production and could be depended on to do this, from year to year.

It is reminded also that our home markets were more or less consistent and predictable. Good customers remained so, though few new accounts of this caliber might be added from one season to the next. At the present time, export interests complain, changes in world trade are not only frequent and often quite unexpected, but where they are instigated by a foreign government, they are likely to be profound. Between 1948 and 1949, according to U S.

Men's hosiery?
Of course you need
QUALITY NEEDLES
There's a
TORRINGTON
needle for every
type of knitting

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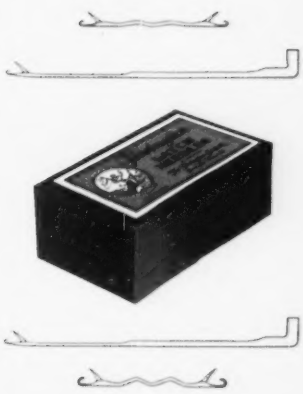


in the final accounting

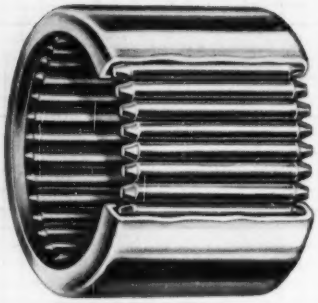
TORRINGTON NEEDLE BEARINGS

show many cost advantages

Your product may benefit from economies in design, manufacture and assembly, through the use of efficient Torrington Needle Bearings.

Unit cost is low. Designs employing compact Needle Bearings are simplified . . . housings and shafts require less machining . . . fewer parts are needed. Fast installation, by a simple arbor press operation, can save you money, too.

Our engineers will welcome an opportunity to show you how the efficiency of your product may be improved while reducing costs with Torrington Needle Bearings.



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TORRINGTON *NEEDLE* **BEARINGS**

NEEDLE
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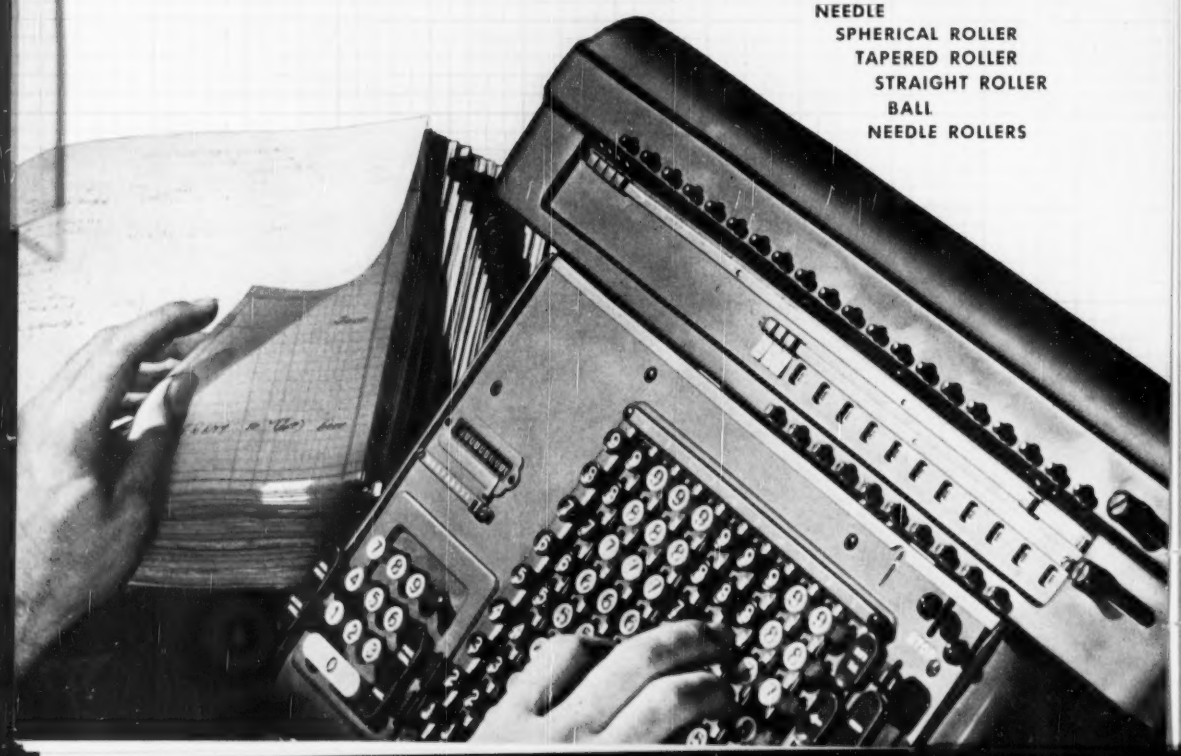
NEEDLE ROLLERS



Department of Commerce figures, our exports gained to fifty countries and decreased to sixty.

Yarn Mills Begin To Trim Output

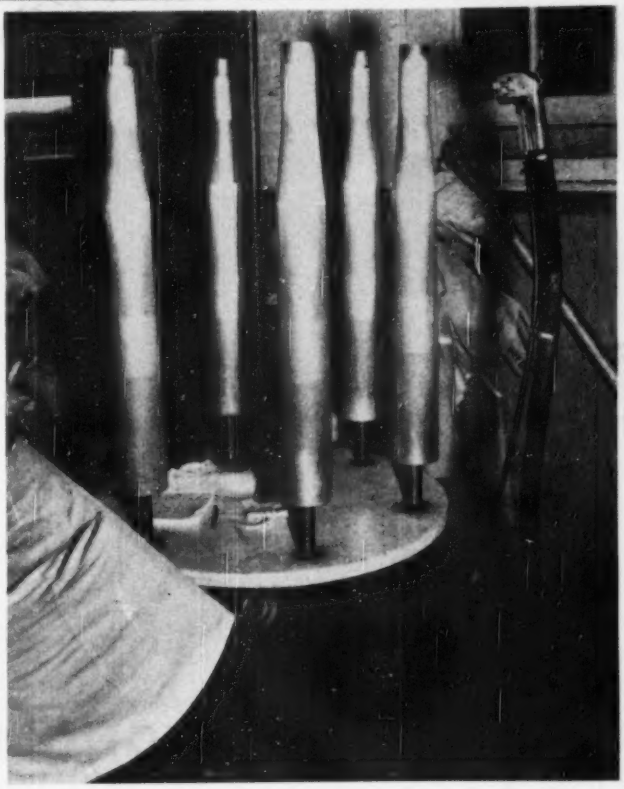
Most of the knitters remain in no haste to acquire more yarn of any sort than they will have definite need for up to midyear. Ever since late last fall yarn sources and market interests tried sporadically to stampede the knitters into making it a practice to make commitments at least 90 to 120 days ahead of wanted deliveries.

Some knitters felt it safer to be guided by the inventory policies of their customers, the wholesalers and retailers. Others figured that the sale yarn industry was likely to again overproduce knitting yarns early in the second quarter.

Reports as to the condition of general business during recent months have finally induced leading yarn mills and their selling agents to revise their expectations for the second quarter. It is said to be evident that the consumers will make their own decisions, and retailers' efforts to hurry them will be less successful than in any preceding spring season since the war ended. Strikes in the coal industry and elsewhere have been chiefly blamed for consumers holding off, but observers say there are also other potent causes.

In the spring seasons of 1948-9 the knitting yarn spinners did not plan to operate spindles for stock, but demand fell off more than they expected and many of the larger customers sold off a part of the yarn they already had taken in. This left the spinners to face several months in spring and summer under conditions of enforced curtailment, with prices declining to very unsatisfactory levels. In the first quarter of 1950, cotton knitting yarn quotations lost their buoyancy as early as February 1 and a month later the price cutting began.

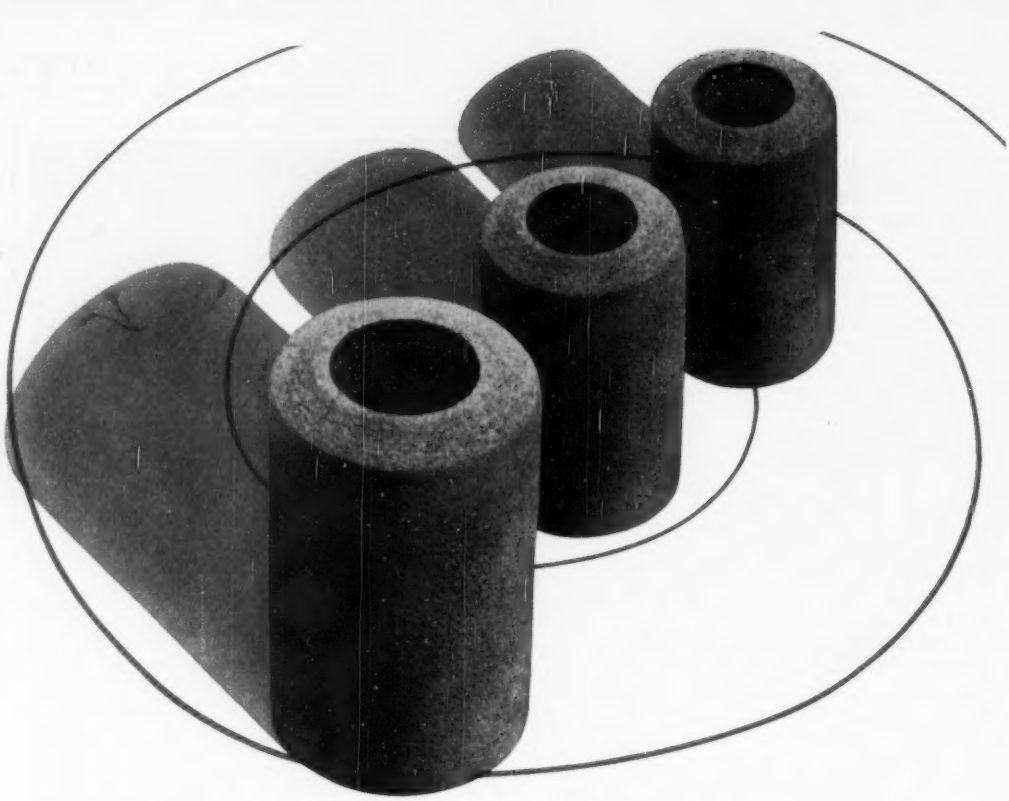
This served notice on knitters that their policy of caution had begun to pay off. It also tipped off the yarn mills that selective curtailment should commence this year about thirty to sixty days sooner than enforced curtailment began last year and in 1948, and on the present occasion part-time operations already are reported especially where buyers have asked deferment of March and early April deliveries.



FORMS SPEED CLIPPING OPERATION ON SEAMLESS NYLONS

These forms have helped reduce the time required to clip loose ends on fine gauge seamless nylon hosiery. Each form rotates on its own bearing which is mounted on a circular platform. The platform is mounted on a framework to elevate it at a convenient height for the operatives to work; and an electric motor rotates the platform slowly while the clipping operation is being done.

An operative on one side of the platform removes clipped stockings and replaces them with stockings that have not been clipped. A cloth tray serves as a reservoir for unclipped stockings, and the clipped stockings are placed in another receptacle nearby. The clipper is operated from the opposite side of the platform. This arangement permits the clipper to operate without interruption. The assembly was made in the mill shop for clipping loose ends on French heels.



REAL SPINNING ECONOMY

With Armstrong's Cork Cots

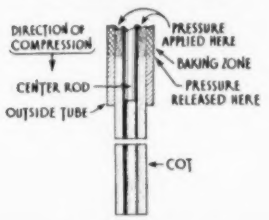
It costs less to spin on Armstrong's Cork Cots because they are low in first cost and give you two to three years' front line service with most yarns. Seamless and pre-glued, they also reduce roll shop labor costs and assembly time.

There's no danger of eyebrowing with Armstrong's Cork Cots. High-friction cork packs waste fibers well back on the clearer boards where they can't fall into the yarn. In addition, these cots reduce clearer waste as much as 50%.

Compare these low-cost advantages with your present covers, and you'll see why so many mill men use Armstrong's Cork Cots for real spinning economy.

Get samples and full information from your Armstrong representative or write Armstrong Cork Company, Textile Products Department, 3605 Arch Street, Lancaster, Pa. These cots are available for export.

Extrusion Process Produces Seamless Cork Cots



Armstrong's Cork Cots have no structural weakness to cause premature breakdown. Each cot is uniform in density from inside to outside, from end to end. Each compresses evenly, spins stronger, more uniform yarn.

ACCOTEX IS A REGISTERED TRADE-MARK.

Better running work . . . more poundage

ARMSTRONG'S CORK COTS

ACCOTEX COTS • ACCOTEX APRONS

Revision of Standard for Men's Circular Flat and Rib Knit Rayon Underwear

A recommended revision of men's circular flat and rib knit rayon underwear, Commercial Standard 148-48, has been circulated to manufacturers, distributors, and users for written acceptance, according to announcement by the Commodity Standards Division of the National Bureau of Standards. This standard was first issued in 1948.

The recommended revision as approved by the Standing Committee was proposed by the Underwear Institute in order to adjust the measurements for men's knitted rayon track pants for the following reasons:

When the measurements for men's track pants were originally developed, elastic having a very hard stretch was used for the waist instead of the softer more easily stretched elastic now available, thus making a change in waist size desirable. The original seat measurements were more or less influenced by those of shorts made from woven fabrics. It was later realized, however, that a knitted short is more comfortable and more satisfactory if somewhat closer fitting. It is recommended, therefore, that the standard be revised in the light of experience and in keeping with modern practices in this field.

The revision provides standard methods of measuring and standard measurements and tolerances for men's circular flat and rib knit rayon underwear, thus providing a uniform basis for identifying garments made to standard measurements.

Mimeographed copies of TS-4942, of the recommended revision may be obtained from the Commodity Standards Division, National Bureau of Standards, Washington 25, D. C.

AN EYE ON THE KNITTING MILLS

An expansion and modernization program, which will include installation of new machinery, has begun at the Anniston, Ala., plant of **Utica (N. Y.) Knitting Co.**

New knitting machines and accessory equipment have been installed as part of the expansion program at the Sanford, N. C., mill of **Wyatt Knitting Co.**

Marionette Hosiery Mills, Inc., Coatesville, Pa., is discontinuing manufacture of hosiery and will throw yarns for knitting and weaving service. Its name has been changed to Marionette Mills, Inc.

Triad Hosiery Co., Inc., Dover, Del., was recently chartered to operate a mill. It is represented by Corporation Trust Co., Wilmington, Del.

Accurate Knitting Mills, Inc. has been recently incorporated for the manufacture of knit goods. Irene E. Clayman, 1450 Broadway, New York, N. Y., is attorney and representative.

Lorimer Hosiery Mills, Inc., Burlington, N. C., recently organized, has taken over Lasley Hosiery Mills and has also acquired the local finishing plant of Elder Hosiery Mills, Inc. Production of men's hosiery will be continued.

Contract has been let by **Sandhurst Mills, Inc.,** Rockingham, N. C., for the erection of a one-story modern mill. An initial allotment of 16 full-fashioned knitting machines and auxiliary equipment will be installed, and mill is expected to be ready for production in the fall.

Production of 60-gauge, 15-denier twisted nylon stockings has been started at the recently organized **Havva Hosiery Mills,** Phenix City, Ala. Shalom Joseph is president.

Stylewise Mills, Inc., was recently chartered for the manufacture of women's nylon hosiery and underwear. As soon as the building now being erected at Carrollton, Ga., is completed, machinery will be installed and workers trained.

An expansion and improvement program, said to amount to more than $1,000,000, is planned by **Mojud Hosiery Co., Inc.,** at its Greensboro, N. C., mill.

J. B. Sherrill and F. C. Sherrill, Jr, Cornelius, N. C., are heading the newly chartered **Barnett Hosiery Mills, Inc.,** Taylorsville, N. C.

A one-story mill, with approximately 7000 sq. ft. floor space, is under construction by **Walton Hosiery Mills, Inc.,** Statesville, N. C.

Waldensian Hosiery Mills, Inc., Valdese, N. C., is planning a one-story addition for expansion of its full-fashioned and seamless hosiery divisions.

The Delaware Textile Co., Inc., Middletown, Del., has begun production of tricot knit fabrics from nylon and other fibers.

A building of approximately 6000 sq. ft. has been added to **Macon Hosiery Mills, Inc.,** Macon, Ga. It houses four 51-gauge, 32-section Kalio machines with space provided for four additional machines.

Mayer Rosenbloom of **Tiger Lily Hosiery Mills** has purchased **Maure Hosiery Mill, Inc.,** Bristol, Pa. Facilities will be expanded to produce 66 gauge, 15 denier hosiery.

Pay and Production Control System for Needle Trades

Continual developments have been made in the Ticketograph pay and production control system to meet up-to-date requirements of manufacturers engaged in the needle trade industries. Every Ticketograph system is individually designed around the manufacturing and accounting procedures of the user.

This system is not difficult to operate. The Ticketograph machine imprints variable data pertaining to office, factory and production control, on coupon tickets—a method based on having a ticket with as many detachable coupons as there are operations on the article to be made. Manufacturers are assured that coupons will not be altered during the period elapsing between the time they are made out and turned in for pay.

The construction of the machine

Ticketograph Machine for pay and production control (Commercial Controls).

is simple, trouble-free and durable. It is made in models to fit practically any payroll and production system. These machines are leased at a nominal monthly rate which includes service.

Ticketograph Division of Commercial Controls Corporation, Rochester 2, N. Y.

For additional data, request item E-201, using business reply card on page 206.

Cures Sought For Knitwear Ills

In most branches of the knitting industry, no matter where located, over the last several months there have been individual and group conferences to discuss remedies for the current crop of maladies that plague the needle trades.

In ordinary times, when volume and profits for knitters are fairly satisfactory, such conferences take a trend toward suggestions and discussions for the better handling of the business, including improvements in methods and processes, and in the end-products: economies in manufacturers' costs; more efficient marketing of merchandise, etc. Usually there are pleas for cooperation in bringing

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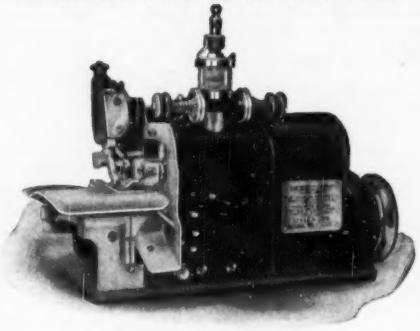

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results from the suggested improvements.

Recent and current sessions of this continuous trade "seminar" have been stressing the rapid growth of competition in the last couple of years, and this also is the main theme developed in any conclave of wholesalers and retailers. Discussions begin with the assumption that: "The other fellows are getting ahead of us," and the main aim seems to be to light on some scheme for out-guessing them. Meanwhile, the ultimate consumer, who has the final say about everything connected with merchandising, knows little or nothing of the industrial background of the wares he buys, and cares less.

To illustrate: Knitwear producers have occasion almost daily to see retail goods of the kind and quality they make, offered by mercantile outfits at prices below what it cost to make the merchandise and ship it. Excepting in wartime, or during brief peacetime "booms," this is a routine thing in the big centers of population—and often in rural districts, by way of the mail order houses. But it still sets off fulminations among the mills and middlemen. "Produce less" is the axiom in the few industries which usually are less afflicted by price cutting.

Careful study of trends in operatives' spendable income, matched with close appraisal of retail dollar volume sales, is a big help in arriving at the vital decision, which nowadays consists of selecting the proper time to curtail output.

Revamping of Plants Practically Completed

The revamping of knitting plants in various centers, which reached considerable scope after the war ended, appears largely to have been completed, according to a survey made for a financial interest in the East. The knitwear field was only one of many lines covered by this appraisal. The general result obtained from compiling the replies to questionnaires was that this year there will be less bank lending of funds to manufacturers for modernization of equipment and erecting new buildings.

Exceptions are noted in some cases where new owners have acquired properties already set up to make knitwear, but changes have to be made in arrangement and machinery in order to fit in with new requirements. In most of these cases, the purchasers are in position to pay for this work out of their own funds. The questionnaires frequently were supplemented by personal interviews with manufacturers. These discussions brought out that production in many lines is now deemed sufficient for the probable demand

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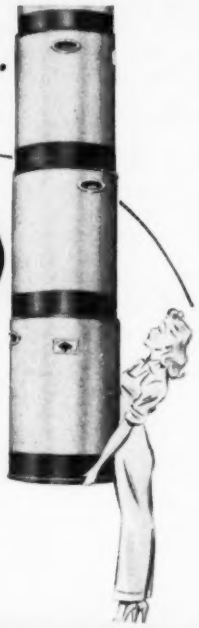
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over the next few years. It also was cited that manufacturing methods and the kinds of materials used, are undergoing many changes.

It was explained this prevalence of innovations makes it difficult for manufacturers to make plans far ahead, where substantial investment in real estate, buildings and machinery would naturally require plenty of time to mature into profits. Some manufacturers who adopted a five-year program of expansion back in 1946-7, to be paid for partly out of periodical surplus earnings, were disappointed with results at end of 1948 and still more so in 1949, in the textile-apparel field, and either shelved the program or have minimized it for 1950.

Incidence of taxation against manufacturers' income, it was stated, figures largely in making them cautious about sinking additional funds into permanent improvements in present locations. In some states and cities, special taxes have come into effect in the last couple of years. Small concerns, occupying leased buildings, accordingly have removed into more congenial localities; but the point is urged that it is seldom possible, without serious loss, for a large establishment to "dodge" onerous taxes by taking such a drastic step.

Devaluation Affects Cashmere Sweaters

Some American retailers have been prone to promote cashmere sweater sales chiefly on the basis of price cutting since the devaluation of the British pound. The National Knitted Outerwear Association has indicated that to promote cashmere on the basis of price cutting, and further to limit selling possibilities by unquestioningly exploiting the appeal of the British label on imported sweaters, without due consideration of the American production, is a merchandising error which retailers ought to correct. The demand for this luxury garment has always been great, and the supply, like the world supply of cashmere hair, rather limited.

Fall Knitwear Off To Slow Start

In some areas which embrace large groups of population, knitgoods distributors have shown intention of looking more fully into their probable fall requirements.

During the early part of last winter unseasonable weather counseled caution, but in February and later there was a belated onset of real winter temperatures in many localities. This helped stores to clear a substantial part of their winter stocks.

Much the same thing happened during the like period last year, but this didn't prevent lively business in knitted merchandise last fall.

There is also a better understanding now among wholesale and retail outlets that manufacturers are more alert now to the implications of overproduction, and thus cannot be counted on to again be ready to step in with prompt-shipment supplies for customers who consciously withheld timely orders. Those who compare the present stock position of distributors with that which prevailed a year ago, contend the stores and jobbers now own considerably less of this merchandise.

Advance buying for fall, however, still remains in the early stages at this writing. Most of the mills are reported to have quietly negotiated some forward transactions with larger customers, often on the basis of last year's price range. Others simply are waiting for buyers to show more interest.

It is cited that spring seasonal business at the retail end needs careful watching. There is plenty of competition for a share of the consumer's dollar at a time when the latter often has appeared much more conservative than heretofore since the war ended.

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Comments on April Editorial "How Far Must We Go?"

EDITOR TEXTILE INDUSTRIES:

The editorial which appeared in the April issue of TEXTILE INDUSTRIES entitled "How Far Must We Go?" was obviously one to stimulate thought, rather than to answer a definite question.

The editorial presents the case of two boys who were just finishing engineering courses at college and who were applying for jobs; the first boy was interested not only in the starting salary, but the length of time before he would be making $5000, the fringe benefits offered by the company, and the company's retirement plan.

Not being satisfied with the answers he secured from the textile mill where he was making application for work, he took his talents elsewhere, going to work for an organization outside of the textile field where the answers to his questions were more favorable and where the retirement program at age 65 met with his approval.

The second student had only one question. He was interested in the company's policy of promotion from within. Receiving a satisfactory answer, he went to work for the company, and the editorial points out that "he probably will earn enough to plan for his own retirement."

It is to the credit of this young man that he even asked the question.

The textile industry urgently needs for the present and for the future the technically trained men who are graduated from the engineering schools, graduates in the field of textile engineering, chemical engineering, electrical, mechanical, industrial, etc. And although it would be easy to criticize the graduate who asked for more tangible benefits, let us take a look at what his environment and education have been—and then let us place the blame where it logically belongs.

Except for a few older men, in college, the average student of today has been exposed to only one political creed. That creed has been offered by the administration that has been in power since 1933, originally headed by Mr. Roosevelt. The administration has been committed to the philosophy of the dole system whereby those who do not choose to work, need not work; those who wish to work have been penalized in such a manner that it is strange indeed that they will continue to produce for themselves and for those who prefer to live off of the government.

If, since 1933, the student has seen those who produced nothing secure a living, is it any wonder that he desires additional compensation for actually working and producing something of value.

His question on fringe benefits also is a natural one. Fringe benefits can cover a wide field, such as hospitalization insurance, housing, recreation, and a retirement plan, to mention only a few.

With the type of support that the federal administration has given collective bargaining, fringe benefits have become not only the popular but the expected procedure. Little consideration is given to whether or not an organization can afford to offer fringe benefits. In a number of instances fringe benefits have practically been mandatory when supported by the federal administration. Too, with the administration offering housing with practically no down payment, unemployment compensation to those who are unable to secure work and even to those who for personal reasons or for pressure

Kink Contest

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This contest ends July 15, 1950

ONE HUNDRED DOLLARS will be awarded for the most helpful short cut, kink, time-saving device, cost-cutting suggestion, or quality improvement idea submitted by July 15.

The contest is open to any reader of this magazine. Contributions eligible for the prize must not have appeared elsewhere.

All material will be paid for at regular space rates upon acceptance irrespective of the contest winner. Advise when submitting entry if participant's name may be used. Only one award will be made in each contest.

Participants are not restricted as to number of items submitted to compete in the contest. Each entry should be described in sufficient detail to make it easily understood, and where possible, glossy photographs or pencil sketches should be included. Finished drawings are not necessary.

All entries for this contest must be postmarked not later than midnight, July 15, 1950. Address: Editor "Textile Industries," 806 Peachtree Street, N. E., Atlanta 5, Georgia.

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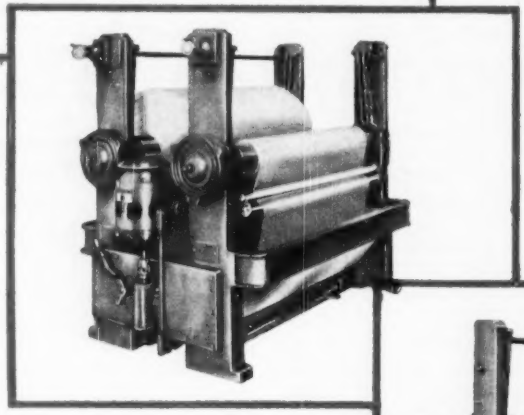

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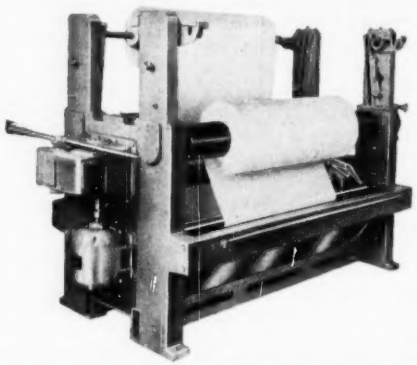

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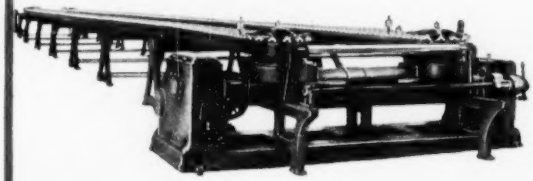

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reasons choose not to work, and with social security benefits, is it any wonder that a young graduate has come under the influence of the "trend of the times."

Of course, the rapid inflation and the war-time pay scale also affect his thinking.

Another factor which influences college graduates of today is that industry was so anxious for men during and immediately following the war that they paid high premium rates for college graduates. It was realized by industry that this was a mistake at the time and that the then-prevailing wage scales could not continue. It was not an unusual occurrence for a college graduate to be granted a higher starting salary than the middle aged professor, who taught him and who had years of experience, made at the time.

It is not known how general was the principle of the college professors advising the students to seek higher salaries instead of treating the first few years in business and in industry as an apprenticeship. However, on the surface, the appearance is that even though the students may not have been encouraged in this idea, they certainly were not discouraged.

Having been exposed for so long a time in an atmsophere of incredulous political and civil policies, is it any wonder that the young man of today thinks differently from the young man of yesterday? This is not to *excuse* the college graduate, but to show how his training and his environment have affected his plans. His idea of his own value may have to change.

Most of the technically trained men in the textile industry who have reached high positions started off in the textile plants on the lowest jobs. They worked twelve hours a day or longer, suffered unnecessarily under men who came up an even harder way, were looked down upon by men in supervisory and executive positions, and generally had a hard row to hoe. These men are particularly proud to relate the experiences of the "old days." However, I seriously doubt that they would wish to go through the same experiences again, I doubt that they would expect their sons to go through these experiences, and I doubt that they would wish to see any one else in the same predicament they found themselves.

These men who came up the hard way do not desire, however, to make the road too easy for the present day college student when he is starting out in industry. Whether it is right or wrong, we all have a reluctance to make the path too much easier for the newcomer than we had for ourselves. We desire to make it somewhat easier, but none of us is ready to go overboard on the idea. We came up the hard way, and we expect the other fellow to come up the hard way, too.

Therefore, we are particularly happy with the student who was primarily interested in the company's policy of promotion from within.

There will be many of us within the textile industry who will be happy to take the second student into the organization, but will write the first one off as a bad risk and as one who is in unworthy of our time to train and to develop into the textile industry. But, with the textile industry so urgently needing the technically trained men and with the philosophy as outlined in the preceding paragraphs so prevalent today, the industry may not be able to overlook the technically trained man who is interested in the starting salary, fringe benefits, and his retirement pay.

If such men are disregarded by the industry because of a creed to which they have been exposed, and which creed has been permitted by the business men of America, then the industry stands the chance of suffering for the future. The possibility is that there will not be enough students who are interested only in promotion from within the organization to satisfy the needs of the textile industry.

Also, other industries may take a broader view of the entire situation and choose to take the "fringe benefit" graduates into their organization, work with them, teach them the creeds which have been so successful in the business world, and develop men of capabilities to the advantages of their industries—and to the detriment of the textile industry.

The textile industry can well ask itself the question "How far are we expected to go in attracting technically trained men to our industry?"

If the industry wants technically trained men, it must meet the competition from other industries.

If the textile industry wishes to change the thinking of college graduates who expect too much, that is the job of the textile industry.

If the textile industry wishes to absorb men who are easy to please, and eliminate those who are hard to please, that is the business of the textile industry—but with such a policy it is possible that the textile business will be out of business.

CONTRIBUTOR NO. 8274

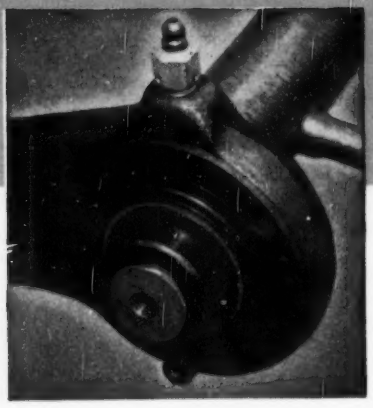
Question on Reclaiming Filling

EDITOR TEXTILE INDUSTRIES:

We are interested to know how other mill men handle their defective filling bobbins (soiled or

Smoother OPERATION!

Ball Bearing Off End Stand



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A completely sealed bearing unit, this new stand—when used in combination with the Southern States Ball Bearing Comb Box—eliminates the possibility of oil damage at the front of the card. While adjustments can be made at the Comb Box, the new Ball Bearing Stand will correct **minor** misalignment of the Comb Stock.

Southern States makes available to you **now** either separate unit or combination replacements of your old, worn-out comb boxes, comb stocks, and off-end stands. Purchase them individually or take advantage of complete replacement by ordering the three units at one time. Specify make of cotton card when ordering.

Replace old sleeve-type bearings with the new Southern States Ball Bearing Off-End Stand. Adaptable to **any current make of cotton card,** this efficient unit is completely **sealed,** requiring a minimum of attention. Simply and quickly installed, it is available for either right—or left—hand mounting and can be reversed **right in your cardroom!** You can insure more accurate comb setting—retain this accuracy for the life of the bearing.

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tangled bobbins). Our problem is in preventing the costs of reclaiming from amounting to more than the reclaimed yarn is worth. The accompanying photograph shows how we handle defective, tangled, or soiled bobbins. The operator is employed full time to take care of the reclaiming operation, and the machine with which she works was made in our shop. How do other mill men keep costs down on similar operations?

On soiled or oily bobbins, we put a metal clip on the oil spot and wind off the soiled yarn to the bottom of the clip where rewinding is automatically stopped. We should appreciate hearing from some of your readers as to how they reclaim their filling yarn.

CONTRIBUTOR No. 8264

Yarn Tension in Mule Spinning

EDITOR TEXTILE INDUSTRIES:

We have made some adjustments and changes in our wool spinning techniques, and some of your readers may find them of interest and help in the spinning department.

In mule spinning, the tension on the yarn during winding is controlled primarily by the weights on the salmon head levers. There are many other minor influences at work which altogether may exert considerable tension. For example, the friction between the counter faller shaft and their bearings (faller stands) exert tension on the yarn. The object of the counter faller wire, the counter faller shaft, and all its attachments is to take up any slack yarn which results from the difference between the winding on rate and the yarn delivery rate. This difference may be appreciable, depending upon the general mechanical condition of the mule and the skill of the operator.

When the counter faller wire moves downward, the tension on the yarn must be at least equal to the moment of the balance weights plus the friction of the stands. When the counter wire moves upward, the yarn tension is equal to the moment of the weights minus the friction of the stands.

Since the tension of the yarn, from this cause alone, may vary as much as twice the frictional resistance of the counter faller shaft and the stands, it is imperative that this friction be reduced to the absolute minimum. The lubrication of these bearings is of doubtful value unless performed very carefully and at the correct time. The proximity of the bearings to the revolving spindles, and the fact that operators often form the habit of putting heir hands on the faller shaft when "following up" the carriage, makes the transfer of oil from the stands to the yarn a simple matter. Oil or grease also seems to attract short floating fibers, thereby producing accumulations of oily fibers. Fiber accumulations between the faller shaft and the bearings interfere with free movement of the shaft.

A good way to prevent oil on the stands from getting onto the yarn is to tie spindle band tightly around the faller shaft at each side of the bearing surface. These rings may then be pushed as near to the bearings as possible to perform the function of stuffing boxes as illustrated in Fig. 1. With this arrangement, it is possible to lubricate the shaft with a few drops of oil each week. This should be done at a time when there is little or no yarn on the spindles, thereby eliminating the risk of getting oil on the yarn.

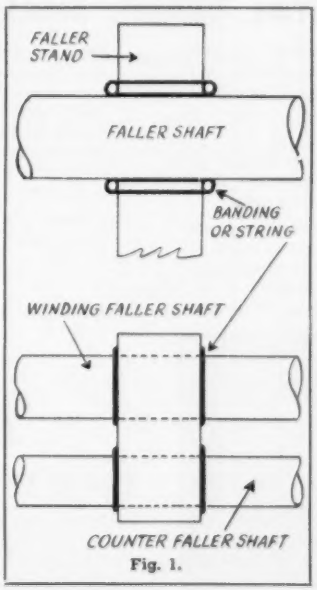


Fig. 1.

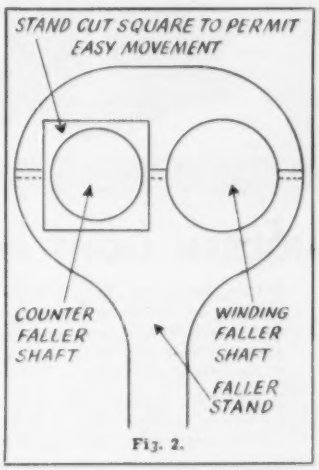
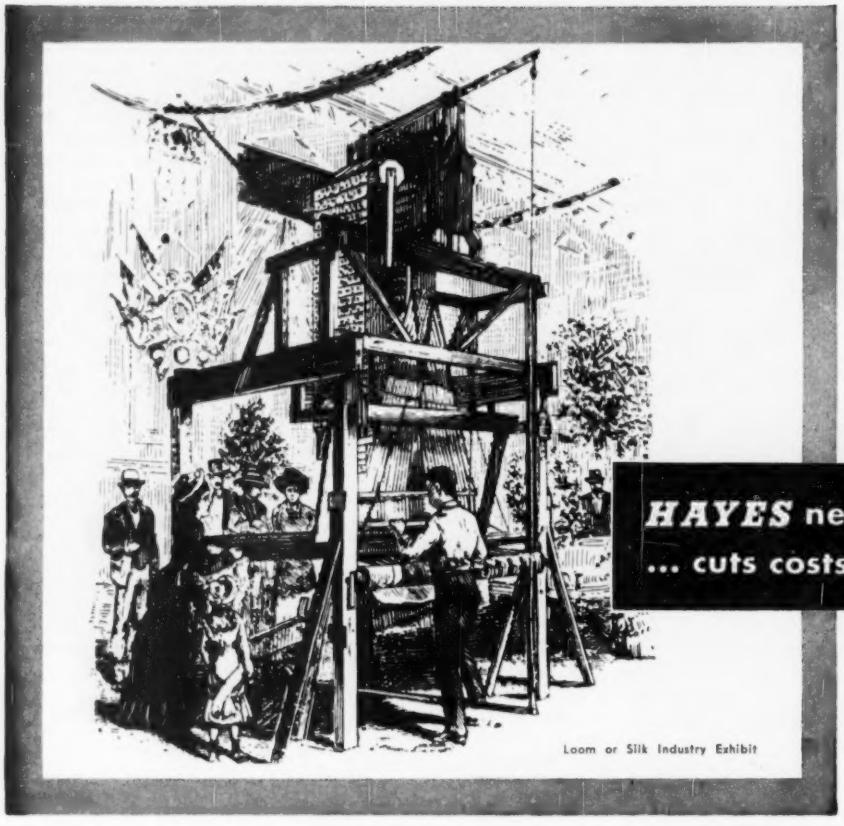


Fig. 2.

Alignment of Faller Stands. At the commencement of the inward run, the drawing-in band moves the middle of the carriage slightly in advance of the ends. At the termination of the run in, the action of the check band and the nosing motion retards the middle of the carriage more than the outend. This gives the troublesome "carriage swing" which all mules possess to some extent. This action causes the faller stands (since they are part of the carriage) to become out of alignment and back



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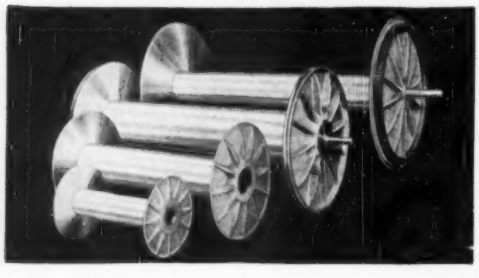

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HOME OFFICE: Jackson, Michigan

into alignment again several times a minute.

To reduce friction and prevent the faller shaft from bending, we have had the round faller stands cut square as shown in Fig. 2. The sides of the square are about 3/32" larger than the diameter of the shaft. The winding faller bearing is kept round so that it may exert some influence on keeping the carriage as straight as possible.

By squaring the faller stands, as indicated on the drawings, it is possible to increase the number of weights on the levers because the tension is more uniform in winding the yarn. More weight on the levers brings forth the need for a larger builder wheel to maintain the same cop diameter, indicating a greater yardage on the cops. By squaring the stands, it has been found possible to increase the yardage from 4% to as much as 8%.

CONTRIBUTOR NO. 8261
(Canada)

Fire Protection on Opener Hopper

EDITOR TEXTILE INDUSTRIES:

Many mills are still using the old style hopper on their openers and pickers, and when fire gets in the hoppers it is quite a job to remove the burning cotton before the aprons are damaged, although the sprinkler head goes off. The sprinkler wets down the top of the mass of cotton in the hopper but allows the cotton next to the apron and around the pulleys to continue smoldering and burning until the smoke has cleared enough for the operator to reach over the hopper and remove the cotton. By this time the wood slats or canvas backing have been burned in several spots bad enough to make it necessary to replace the whole apron.

To facilitate easy removal of burning cotton from aprons in hoppers, the cast iron back of the hopper can be removed and replaced with a piece of light weight sheet steel. The piece of sheet steel can be hinged or pivoted at the bottom and held in place at the top by two hooks. When there is a fire in the hopper, all the operator has to do is unhook the back piece and allow it to fall to the floor. In a matter of seconds he can take a broom or rake and pull all of the burning cotton out of the hopper before it has time to damage the apron.

CONTRIBUTOR NO. 8273

Portable Static Eliminators

EDITOR TEXTILE INDUSTRIES:

The versatile feature of our static eliminators makes a few go a long way. We have static phenomena occurring in most of the finishing operations common to woolen fabric production. Brushing, shearing, napping, calendering, and folding are some of the processes which experience static interference. However, it is almost impossible to predict when this trouble will develop.

We use several radioactive static eliminators to neutralize static at the exact point and time of origin. Ordinarily, these devices are stored. When static develops, the devices are temporarily mounted on the offending machine until the disturbance is over.

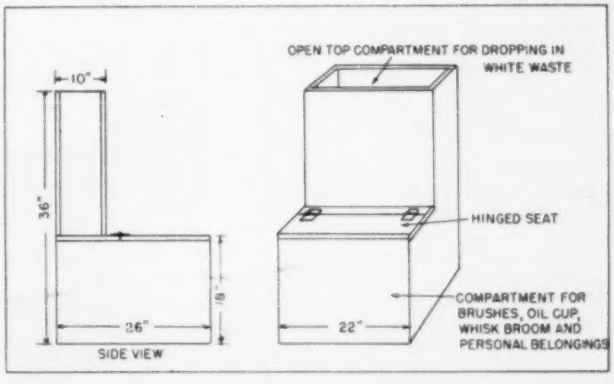
This procedure prolongs the life of these relatively expensive items by saving on wear and tear. Also, the number of permanent radioactive or other static eliminators is reduced, thereby conserving expenditures for these items.

CONTRIBUTOR NO. 8260

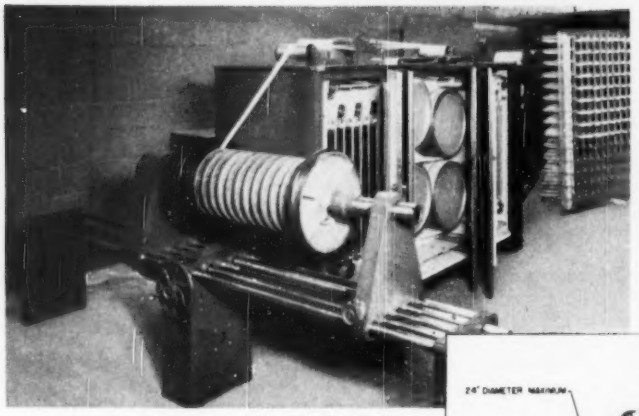
Multi-Purpose Chair for Card Room

EDITOR TEXTILE INDUSTRIES:

We are having some "three-way" chairs made to be placed at each fly frame in the carding department. The chairs are made to serve three purposes: (1) The frame operator uses the chair to sit on when he has time to do so, (2) white waste is kept in top (or back) compartment, and (3) oil cans, brushes, personal belongings, etc., can be kept in the bottom



Announcing the *New* VERSATILE MULTI-PURPOSE CALLAWAY SLASHER*



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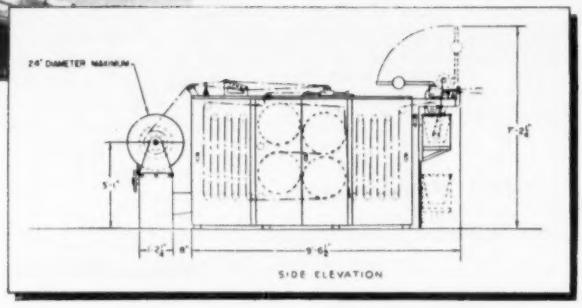

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SHORT-RUN STYLES,
NEW STYLE SAMPLES,
TEST and RESEARCH MATERIAL
with a minimum of yarn, little time, trouble, or expense

The Callaway Slasher is specially designed so that short runs of sample and test warps of cotton, synthetics, silk, wool or worsted can be treated at low cost and with little effort.

Using a minimum amount of yarn from individual packages, this versatile slasher will deliver a sized warp of any possible number of ends.

For test and research work, one or more size treatments and three different drying methods — hot air, cylinder contact and infra-red — can be applied to sections of the same warp at the same time. Weaving tests of various warp treatments can be made on the same loom simultaneously.

In addition to its many uses in research work the Callaway Slasher can be of great value in small or large mills for slashing short-run styles, for making up new style samples or for evaluation of weaving quality.

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compartment so they will be out of sight. The white waste is gathered from the receptacle once during each shift.

The seat of the chair is hinged on the bottom compartment and can be raised to place items inside. When lowered it serves as a seat (see illustration). The measurements may be altered to suit the individual needs of the mill, but the arrangement seems to have many advantages.

CONTRIBUTOR No. 8189

Comments on Yarn Numbering

EDITOR TEXTILE INDUSTRIES:

In the February, 1950, issue of TEXTILE INDUSTRIES, page 97, there appears a report of a survey on universal yarn numbering. The writer of the report claims that the result of the survey proves that the metric yarn numbering system is favored by 2000 I.C.S. students.

The figures given in the report do not support the claim. It is stated that 38 per cent of the students declared in favor of the metric system of yarn numbering. The report did not state which particular metric system is favored.

Rearranging the figures we get the following results:

760 students or 38% favor metric system
20 students or 1% favor Denier system
40 students or 2% favor Grex system

820 students or 41% favor metric units

For non-metric systems we get the following results:

440 students or 22% favor TYPP system
320 students or 16% favor cotton system
140 students or 7% favor integral system

900 students or 45% favor vulgar units

200 students or 10% favor any indirect system
80 students or 4% favor any direct system

280 students or 14% invalid votes

Summing up we get the following results:

820 students or 41% favor metric systems
900 students or 45% favor vulgar systems
280 students or 14% favor any system

2000 students or 100% total

The tabulated results prove that the metric unit systems lag behind the vulgar systems (yds/lb systems). The 10% in favor of any reciprocal system and the 4% in favor of any direct system have no bearing on the question of metric versus vulgar yarn numbering systems.

The great surprise in the results of the survey is the fact that only 1% of the students favored the Denier system, 2% favored the Grex system, and 7% gave their support to the Integral system. This latter system has received little or no publicity in the United States. Only one textile publication has given the Integral system a fair chance to reach American technicians.

CONTRIBUTOR No. 8267

Tramp Metal Can For Opener Room

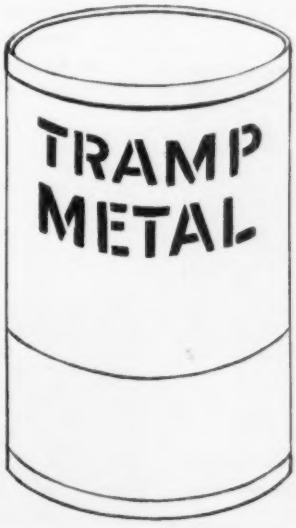
EDITOR TEXTILE INDUSTRIES:

Although magnetic separators are used on opener lines and in hoppers of automatic feeders, a certain amount of tramp metal such as buckles and pieces of ties will get through to the beaters on openers and pickers, thereby causing fires or scarring rollers. Once the tramp metal gets on the floor it is hard to find and will eventually be fed into the machinery with the raw stock.

If a suitable container is convenient for the employee to deposit the metal, he will be less likely to allow it to get into the stock. This is particularly a problem in mills that open their cotton on the floor of the opener room.

A satisfactory container for tramp metal can be made from a roving can. Select a roving can that has been discarded but still has a good bottom. Cut it in half, and put a metal band around the top to keep it from coming to pieces. The can should be painted a very vivid color so that it will attract attention. The letters "Tramp Metal" should be stencilled on the side of the can. Employees who open cotton should be required to keep one of these cans with them when they are opening cotton. The more publicity you can give to tramp metal, the greater the possibility of keeping it out of the stock.

CONTRIBUTOR No. 8269



Waxed Creels Keep Warper Lint-Free

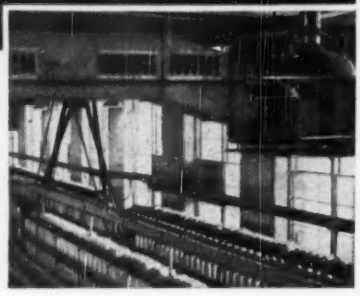
EDITOR TEXTILE INDUSTRIES:

On running 30s warp yarn, we get two beams each from full cheeses in the creel. Sometime ago I noticed that lint gathered on creels when the second beam was run off. When the warper was stopped to put up a broken end, the yarn came in contact with loose lint which was carried into the warper beam. I was having trouble with bunched yarn in the weave room, but snick plates on the spooler were set close enough.

An idea was conceived wherein I used wax on the creels to make them slick so that lint would not gather on them. After following this practice for one year, I found that gouts in the weave room were reduced 25%. I also use wax on posts in the building, and lint does not stick or gather on them.

CONTRIBUTOR No. 8254

Parks AUTOMATIC AIRCHANGER

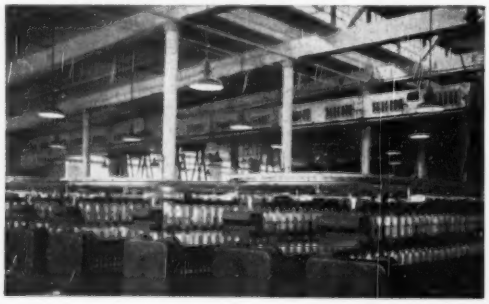


Maintains desired relative humidity regardless of outdoor weather.

Concentration of power in modern textile mills calls for more humidification. This, and heat factors involved, in turn call for predetermined, mechanical ventilation, varying from season to season, from hour to hour.

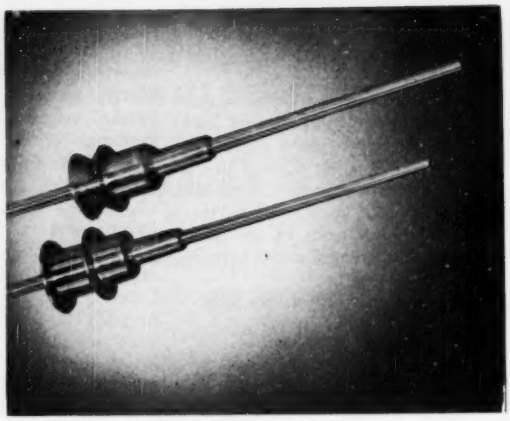
The Parks Automatic Airchanger admits just enough outdoor air, automatically, to keep humidifiers at full capacity during hot dry weather, restricts outdoor air in cold weather.

RESULTS: More constant, more uniform humidity at all times; cooler mill.



Parks-Cramer Company

Fitchburg, Mass. PARKS Certified Climate Charlotte, N. C.



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NEW EQUIPMENT
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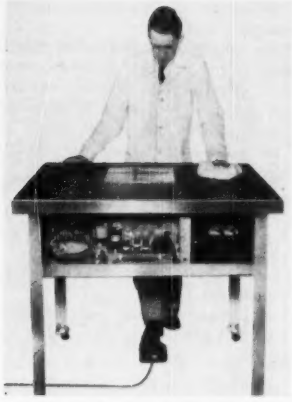


The Nickerson-Hunter Cotton Colorimeter (Gardner).

Cotton Color Measured by New Instrument

Development of an electronic and automatic machine for determining the exact color of cotton has been announced by the Production and Marketing Administration of the U. S. Department of Agriculture.

Called the Nickerson-Hunter Cotton Colorimeter, it is designed for use in the cotton classing room to measure the color of cotton automatically so that its exact color may be known to the classer when he assigns the grade. The colorimeter determines the overall color of fiber and foreign material.

For cottons equal to the respective standard grade boxes in all three grade factors—color, trash, and ginning preparation—the grade may be read directly from the colorimeter, it is claimed. For cottons in which the grade factors must be separately considered in determining a final class, the colorimeter aids the classer in determining a final grade. The instrument should not, therefore, be looked upon as an automatic grading device, since its effective use is dependent upon the judgment of the skilled cotton classer.

The instrument is self-contained in a movable cabinet of table height with a minimum of exposed parts. The exposure of samples and reading of results are done in the horizontal plane of the table. Results in terms of reflectance and yellowness are shown graphically on a two-dimensional scale.

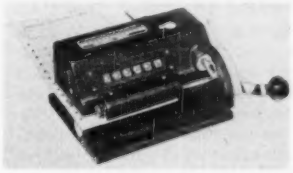
Henry A. Gardner Laboratory, Inc., 4723 Elm St., Bethesda 14, Md.

For additional data, request item E-106, using business reply card on page 206.

Printed Production Record Provided by New Counter

Designed to provide both visual and printed records of textile machinery production, the Model PVR printing counter recently placed on the market is adaptable to looms, perchers, twisters, spinning frames, tenters, shears, etc.

The reading line shows at a glance the quantity registered on the counter, and an upward stroke of the printing lever prints the figures on a sheet or record form.



Rotary printing counter (Durant).

Inspection and measuring machines equipped with the device provide a metered reading of each cut of cloth; a record of this can be furnished to the customer if the manufacturer desires. Also, the textile manufacturer is assured that extra lengths will not be shipped when smaller yardage has been recorded.

Printing type loom pick counters provide not only a record of the number of picks but the loom number is also recorded on each occasion that a reading is taken.

A lock clutch on the reset mechanism prevents unauthorized resetting or tampering. The count can be accumulated for a particular time period or reset after each run and started from zero.

Durant Manufacturing Co., 1929 N. Buffum St., Milwaukee 1, Wis.

For additional data, request item E-105, using business reply card on page 206.

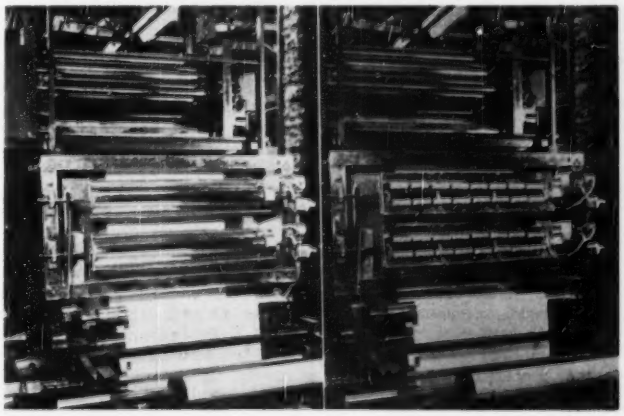
Infrared Drying Unit Protects Textiles When Not in Motion

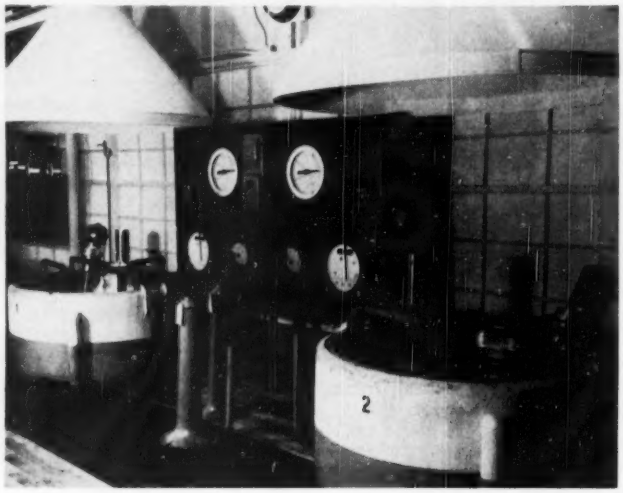
A recently developed infrared drying unit literally turns itself inside out when for any reason the material in process stops moving, thus leaving the material in a neutral heat zone.

This assembly consists of a series of standard drying units connected by chain drive in such a manner that each unit rotates on an axis to deflect the radiant heat away from the yarn or fabric whenever the machine might stop

When the material is moving the heaters burn at full infrared efficiency, directing the heat upon the

Infrared drying unit by Doyle. Photo on left shows unit in position for drying. Right, heating elements turned away from fabric.





Device Records, Indicates, and Controls Viscosity

Continuous, accurate indicating and recording of the viscosity of numerous industrial liquids while under actual processing has been made possible by an instrument known as the ViscoMaT, according to a joint announcement by the Brookfield Engineering Laboratories, Inc., and Brown Instruments Division of Minneapolis-Honeywell Regulator Co.

In addition to indicating and recording viscosity, the device when used with an electronic recorder, can be used as an automatic controller with built-in audible or visual alarms.

The viscometer is said to be capable of indicating and recording viscosity changes as small as one-half of one per cent of scale and can handle viscosity from a minimum of 20 centipoises to a maximum of 100,000.

In the photo above two Brown-Brookfield viscometers provide continuous viscosity measurement in the size cooking process at a large New England mill. Instruments at top of panel are viscosity recorders.

Brown Instruments Division, Minneapolis - Honeywell Regulator Co., Wayne and Roberts Ave., Philadelphia 44, Penna.

For additional data, request item E-116, using business reply card on page 206.

surface of the material. If for any reason the material stops moving the following electrical and mechanical actions take place without attention of any kind by the machine operator:

(1) A relay switch connected to the main motor immediately turns off the heat in the dryers. (2) Another relay starts a small gear reduction motor to turn the hot heated elements away from the material. (3) When the heat units are turned to the proper deflecting angle, a limit switch stops the small motor turning the heaters. (4) When the small motor stops, another relay actuates a magnetic brake to hold the units in exact position. (5) When the machine restarts the entire maneuver is repeated in reverse, lighting the elements, bringing the units back into exact operating position and locking them.

Provisions are made for slowing down as well as for complete stops.

J. E. Doyle Co., Cleveland, Ohio.

For additional data, request item E-115, using business reply card on page 206.

Slip Clutch Drive for Carding Machines

One of the most economical means of converting carding machines from line shaft to individual drives is a recently developed slip clutch drive, according to the equipment manufacturer.

The driven sprocket of a silent chain drive is held between fiber clutch discs through pressure exerted by a spring. The spring is adjusted to the required torque by means of a threaded collar on the clutch body.

The slip clutch permits the motor to pick up the load gradually without danger of shock to the carding machine or stalling of the motor.

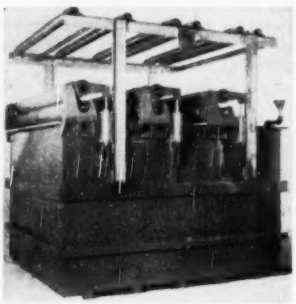
Morse Chain Co., 7601 Central Ave., Detroit 8, Mich.

For additional data, request item E-101, using business reply card on page 206.

Stainless Acid Tank for Carbonizing Ranges

A stainless steel acid tank for use in cloth carbonizing ranges has been announced. According to the manufacturer, the new type tank will afford maximum resistance to acid and a longer life. It is easy to keep clean.

The need for recovering carrier and immersion rolls is eliminated. The carrier sky rolls are located above the tub rim to give a longer



Acid tank (Riggs & Lombard).

soaking time. There are 3 standard sets of squeeze rolls, rubber-covered for pulling quality and proper squeeze.

The tank is normally supplied with air pressure equipment for easy operation and even side-to-side pressure. A compressed air circulating system is at one end to keep the acid in the tub constantly agitated and to

insure an even condition throughout the tank.

Riggs & Lombard, Inc., Foot of Suffolk Street, Lowell, Mass.

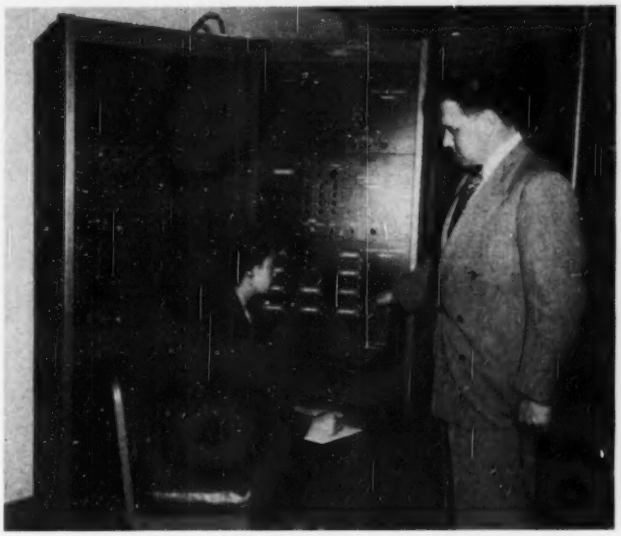
For additional data, request item E-103, using business reply card on page 206.

Time Study Computer

An electronic machine simulates machine and operator actions at a tremendously accelerated rate for rapidly determining production schedules and operators' allowances. Used to study frequently changing combinations of automatic machine cycles, the computer calculates the production on each machine of a group, and the waiting time during which the operator is not loading any machine. The device is operated by one girl who sets dials from work slips. No more skill is required than for the operation of an adding machine, it is claimed.

The Potter Instrument Co., 136-56 Roosevelt Ave., Flushing, L. I., N. Y.

For additional data, request item E-121, using business reply card on page 206.



Electronic time study computer (Potter).

Treadleless Hand Loom

The new Model 12A hand loom is light and compact, despite its 38-inch working width. Treadles have been replaced with a newly developed head motion of the hand-wheel type.

The frame of the loom is aluminum alloy tubing. The machine can be carried with ease in the home or on the back seat of the family car. Overall dimensions are 42" long, 23½" high, and 23" deep; weight, 35 pounds.

The adjustable friction let-off is said to eliminate light and dark streaks in the finished fabric. Production of approximately one yard an hour is reported attainable by the average operator on straight fabric.

The head motion, which governs the pattern, greatly simplifies hand weaving because it locks with every pick, eliminating errors.

Hand-Skill Looms, Inc., 59 Social St., Woonsocket, R. I.

For additional data, request item E-114, using business reply card on page 206.

Hand-Skill Model 12A loom.

Scouring, Desizing Agents

Two new non-ionic type surface active agents, Sterox No. 5 and Sterox No. 6, have been found to be particularly useful in textile and metal cleaning operations.

Both are polyoxyethylene thioethers and are compatible with anionic and cationic type detergents; also they are effective in hard water or in the presence of metallic salts.

Sterox No. 5 and No. 6 are penetrating and leveling agents for dyeing. Sterox No. 6 is being used as a resist agent for dyeing cotton and rayon mixtures with vat dyes.

Sterox No. 6 is described as a very effective scouring agent for textiles, especially for cotton-rayon, rayon-wool and similar mixtures. It is useful in scouring greasy yarn and knitted fabrics, according to the announcement.

Both products are compatible and usually beneficial with most enzyme desizing agents.

Monsanto Chemical Co., St. Louis 4, Mo.

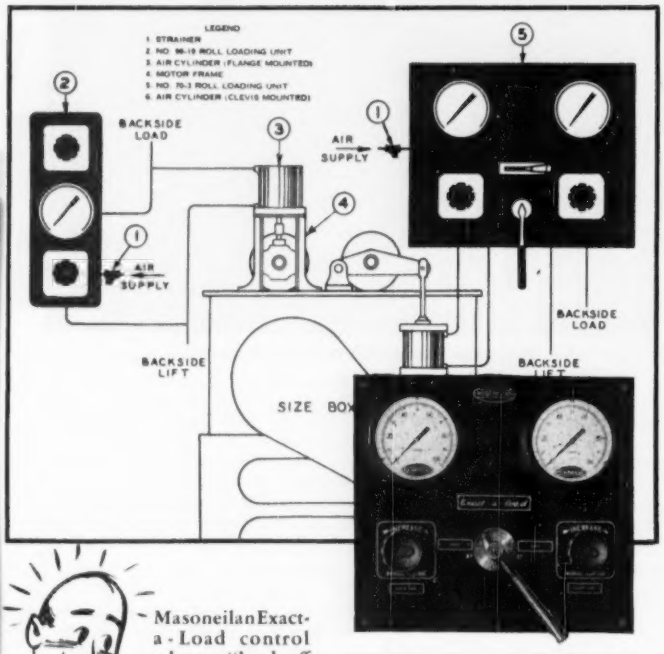
For additional data, request item E-107, using business reply card on page 206.

Oil-Stain Applicator for Pin Drafters and Gill Boxes

A recently announced development for pin drafters and gill boxes is an oil-stain applicator called the "Uxbridge Control-Spray." According to the manufacturer, the device has many advantages: it controls the distribution of the oil and stain; it eliminates almost entirely oil and stain accumulations at the front end of the pin drafter because it is fully enclosed; since the oil and stain are applied directly to the wool sliver under controlled pressure, the application is more uniform and better penetration is achieved; fibers are not disturbed because low pressures are used.

When the pin drafter is stopped, the spray also stops. This prevents puddling and excessive oil or stain at any place on the sliver. The even application of oil and stain lessens considerably the accumulation of brush waste in the next opera-

Take a Load Off Your Mind
WITH
MASONEILAN
Exact-a-Load
Air-Cushioned Roll Loading



Masoneilan Exact-a-Load control takes a "load off your mind" simplifying the operator's work by pneumatically maintaining the load on the rolls regardless of the variations in the thickness of yarn or fabric. Exact-a-Load control applications include—slasher size box feed rolls, extractors, dye padders, pickers, calenders, embossing, printing and other rolls. Get the full cost-cutting facts, today — write for new catalog.

Exact-a-Load Advantages

- **Air Cushioning** prevents bouncing of rolls due to "out of roundness."
- **Close Uniformity** in finished work by holding size, dye, etc., content with maximum extraction.
- **Reproduction of Exact Loading Conditions** permits duplication of runs.
- **Instant Loading, Unloading and Lifting** reduces waste with fast response to load and lift.
- **Increased Production** because pneumatic loading corrects conditions which keep down efficiency.

MASONEILAN

MASON-NEILAN REGULATOR CO.
1194 Adams Street, Boston 24, Mass.

Sales Offices or Distributors in the Following Cities: New York • Syracuse • Chicago • St. Louis Philadelphia • Houston • Denver • Pittsburgh • Cleveland • Cincinnati • Tulsa • Atlanta Detroit • Los Angeles • San Francisco • Salt Lake City • El Paso • Boise • Albuquerque Charlotte, N. C. Mason-Neilan Regulator Company, Ltd., Montreal and Toronto

tions. Stain and oil in varying amounts can be applied to the sliver, depending on the requirements of the stock.

The manufacturer also claims benefits because the oil is applied after the sliver passes through the fallers. Longer pin life with no rusting is claimed.

The oil or oil and stain mixture is applied from a bottle attached to a stanchion which is screwed to the floor at the rear of the pin drafter, between the machine and the creels. Utilizing gravity feed, the oil flows through a metering attachment to the spray nozzles which are mounted on the coiler head. Here it is forced into a fine spray by air pressure.

Solenoid controls shut off both the oil and air when the pin drafter is stopped. There is no time lag when the machine is started up again. In other words, no sliver goes into the can without the proper amount of oil and stain.

Bachmann Uxbridge Worsted Corp., Uxbridge, Mass.

For additional data, request item E-104, using business reply card on page 206.

2 for 1 Cord Twisting Machine

Designed to materially reduce handling time, labor, and floor space as well as increase the output of synthetic and natural cord types of yarns of the two-ply construction, a recently developed cord twisting machine simultaneously handles the following operations: (1) twists the singles yarn; (2) cables the two together; (3) winds the finished cord on a 10-lb double-headed package.

The ply or singles twisting spindles are of the uptwisting two-for-one type wherein the supply package is stationary with yarn being pulled end-over and down through a primary tension device, through the center of the spindle, out through the rotor and secondary tension control, ballooning in free flight up through the guide eye, and then to the gathering pulley.

Supply packages are visible through plastic domes. The cabling spindle is a down twisting two-for-one type wherein the yarn is pulled from the gathering pulley through a guide-eye, ballooning in free flight down to the rotor and up through the center of the spindle, over the

auxiliary capstan to the traverse and then to the package.

Yarn tensions during twisting are automatically maintained at a constant value by the rotor, according to the manufacturer. This uniformity of tension is transmitted through the gathering pulley, resulting in a uniform cabling or doubling tension which is maintained by a brake system applied to the gathering pulley.

A patented magnetic clutch maintains the wind-up tension from start to finish of the package. Traverse also remains the same during winding from start to finish.

Howe Machinery Co., 30 Gregory Ave., Passaic, N. J.

For additional data, request item E-111, using business reply card on page 206.

All-Purpose Lubricant for Textile Machinery

A lubricant has been developed which is said to be suitable for nearly every type of textile machine.

According to the manufacturer, the new product, Sunotex Machine Oil, can effect five distinct savings for textile mills:

First, by providing absolute protection from rust it helps lengthen the life of machines. An extreme pressure ingredient reduces bearing wear. The natural adhesiveness of the oil keeps it in the machines and off the cloth. It scours out completely from fabrics of all types. Finally, since one grade of the oil is suitable for about 90 per cent of all textile equipment, oil inventories can be decreased.

The product is not recommended for lubrication of high speed spindles.

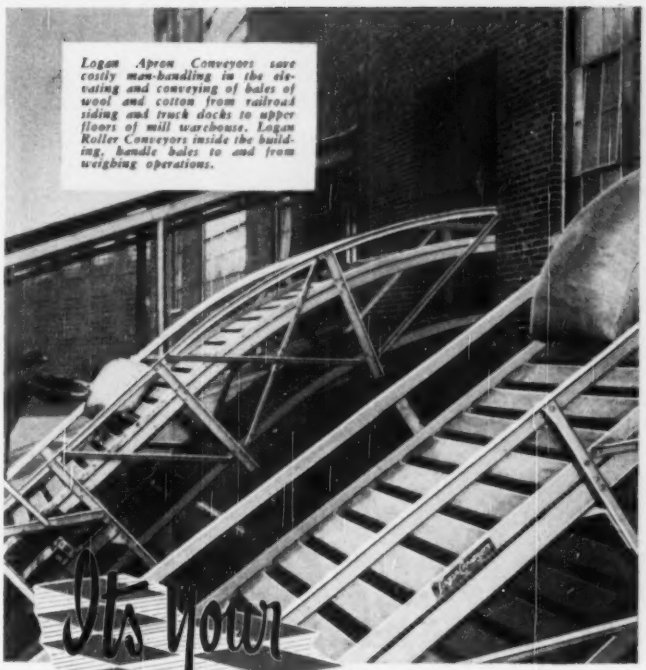
Sun Oil Co., 1608 Walnut St., Philadelphia 3, Pa.

For additional data, request item E-109, using business reply card on page 206.

Screen Printing Machine

A semi-automatic screen printing machine recently made available consists of an arrangement of a fixed table, endless transporting belt to which the material is adhered, and elevators with shelves for screens arranged on both sides of the printing table.

The machine prints one screen after another, wet-on-wet, and then


Logan Apron Conveyors save costly man-handling in the elevating and conveying of bales of wool and cotton from railroad siding and truck docks to upper floors of mill warehouse. Logan Roller Conveyors inside the building, handle bales to and from weighing operations.

It's your move

Many authorities agree that "moving is 40% to 70% of making." This applies to textile mills as well as to industry generally. What is *your* percentage? Why not cut this cost?

Logan installations in many mills are providing high speed production, eliminating waste motion, saving floor space, and reducing maintenance costs.

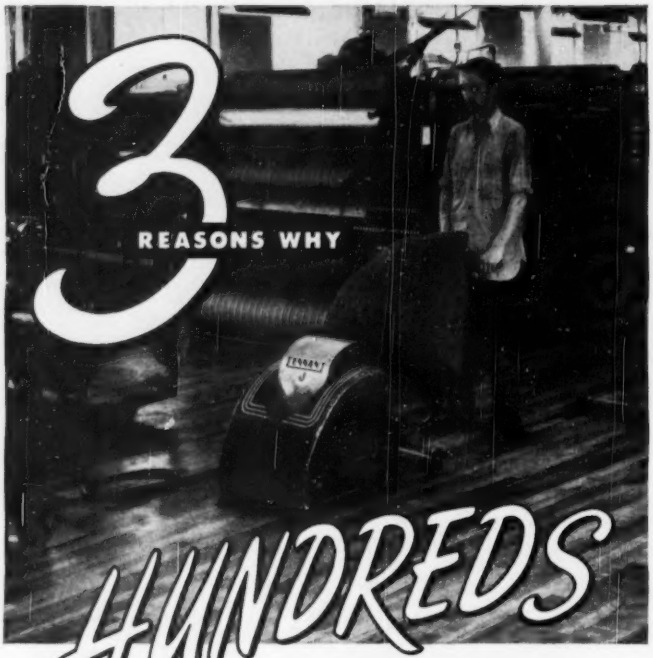
This conveyorized handling makes worthwhile production economies in supplying material to looms, in the movement of containers of empty and filled bobbins, in the handling of cloth between operations, in the receiving of raw materials and in warehousing or shipping.

Write today for information or for the nearest Logan engineer to contact you.

CONVEYORS ARE PART OF THE PROCESS

Logan Conveyors

LOGAN CO., 206 CABEL ST., LOUISVILLE 6, KY.



OF MILLS USE THE
TENNANT System
OF FLOOR MAINTENANCE

Its cost-saving performance and ease of use have established TENNANT as *THE accepted floor maintenance system of the U.S. textile industry.* This unique acceptance is due to these practical advantages . . .

1. CUTS FLOOR MAINTENANCE COSTS
You save 4 ways—in *manhours*, by cleaning faster in one operation with 1 man; you cut *accident costs* by DRY-cleaning (no wet, slick floors). You avoid needless *floor repair costs* . . . and reduce *stock losses* from snags, splinters and soilage.

2. EASIEST TO USE: eliminates scrubbing!
Works like magic! You get rid of dark, rough, oil-soaked fibers . . . and have a smooth, bright, *hardened* floor surface that resists dirt. Stays clean longer! Ends costly, harmful scrubbing and wet-mopping.

3. FITS YOUR MILL'S SPECIFIC NEEDS
Your TENNANT System is individually selected and planned, 100% *specialized* for your mill. Assures you of best results. Personal installation and periodic inspection . . . *without charge.*

ONLY DAILY CARE needed is *fast, low cost sweeping.* Oil, *dirt* and dust do not cling to the smooth, hard surface of a **Tennantized** floor. Dirt sweeps off easily . . . Keeps your floor bright and attractive.

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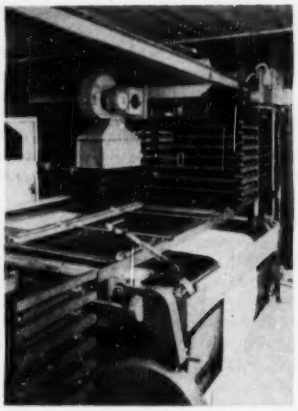
FLOOR MAINTENANCE SYSTEM
Creators of the TENNANT SYSTEM OF FLOOR MAINTENANCE—Manufacturers of Equipment & Materials for MAINTENANCE OF FLOORS, DECKS, ROOFS, HIGHWAYS



Screen printing machine (U. S. A. International).

moves exactly the right distance for the repeat, according to the manufacturer. It is said that the repeat arrangement is extremely sensitive, producing a join of plus or minus .01 mm.

Advantages claimed: saving of manpower; space saving; quick set-up time; skilled labor not required; dry box is provided; can print over edges; possible to print vertical stripes; can accommodate vinyl plastic; low maintenance cost.

U. S. A. International Co., 527 Fifth Ave., New York 17, N. Y.

For additional data, request item E-110, using business reply card on page 206.

New Dyes for Nylon

The development of permanent color, direct application dyes for nylon, in light, medium, and heavy shades has been announced. Known as the Supernylite dyes, they are reported to be extremely fast to light and washing.

The dyes are available in yellow, orange, scarlet, red, blue, green, and brown. They can be used on nylon stock, yarn, or pieces; also for dyeing wool and nylon unions.

Also announced by this manufacturer is a series of Nydye colors for nylon which are readily soluble and are wash-fast. They are applied to nylon as easily as silk colors to silk, or direct colors to cotton, and do not require any dispersing agents or dyeing assistants, it is claimed.

Nydyes are also suitable for the dyeing of medium and heavy shades,

as they pile on and yield a maximum depth with a minimum percentage of dye. Colors include yellow, orange, scarlet, red, violet, three tones of blue (including navy), hunter green, brown, and black. These dyes can also be used in conjunction with both direct and acetate colors, as they have no effect on the dyeing properties or on other colors.

Althouse Chemical Co., Inc., Reading, Pa.

For additional data, request item E-108, using business reply card on page 206.

Weave Room Calculations by Clark Revised

The third edition of Clark's Weave Room Calculations has recently been published (Clark Publishing Co., Charlotte 1, N. C.; price, $5.00).

In the revision of the first part of the book which deals with cotton cloth calculations, there have been included some additional rules and also further information on loom speeds and the number of looms per weaver. An interesting feature is a table showing production details of one print cloth manufactured in each of 24 separate mills.

In the revision of the second part of the book which gives construction particulars for several thousand cotton cloths, there have been added 700 additional fabrics, many of which became important during the World War II. For over 1900 plain woven cotton cloths there have been added data as to the effective yards of yarn per pound of cloth.

Five New DuPont Dyes

Recently placed on the market were the following new dyestuffs:

"Celanthrene" Fast Pink 3B. This is a direct dyeing acetate color which is suitable for the production of a wide range of pastel shades of pink, lilac, and lavender as well as for shading. The color has high affinity for both acetate rayon and nylon and has excellent leveling and penetrating characteristics, according to the manufacturer.

"Acetamine" Fast Yellow 4RL. This dye for acetate and nylon is exceptionally fast to light. It discharges well, is a valuable shading element for increasing the light fast-

Recommended

by **INTERCHEMICAL**

for **ARIDYE PIGMENT PRINTING**

THE NYLON BRISTLE FURNISHER

The sales manager of Interchemical Corporation — Textile Colors Division — manufacturers of Aridye pigment colors for textile printing, approves and recommends nylon bristle brushes for use in textile printing as follows:

"Frankly, we consider brushes with nylon bristles are the best brushes with which to apply pigment colors to print rollers.

"Time and again we have seen the superior results they produce."

JENKINS' METLKOR* FURNISHERS

have cores of aluminum for lightness, with stainless steel shafts for long life.

Nylon bristle is wound on the cores with flat copper wire and set in solvent-proof plastic cement by a patented process. Easy to clean and to keep clean. METLKORS are unaffected by printing colors or cleaning solvents.

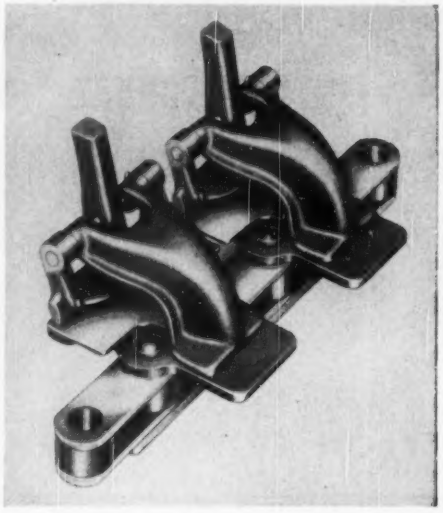
The long-lived nylon bristle is renewable when worn.

*(*Trademark Reg. U. S. Pat. Off.)*

M. W. JENKINS' SONS, INC.

Manufacturers of Industrial Brushes Since 1877

Cedar Grove • Essex County • New Jersey



No. 12 Roller-Type Automatic Tenter Clip patents 2285820 and 2,496,475.

The only full roller driven clip with complete steel body built today for economical operation in excess of 250 yards per minute.

Compare these features:

1 All steel construction cutting down dead weight and full roller drive minimizing friction have brought definite savings in power costs.

2 Each tenter clip can be quickly detached from the roller chain for replacement.

3 The jaw and controller is a one piece bronze alloy assembly cutting down on the moving parts and controller breakage of conventional clips.

4 A patented interlocking device on the roller chain eliminates any possibility of weaving motion.

Actual mill operations have shown that this clip is effective over a wide range of fabrics at all operating speeds.

See it in operation at the American Textile Machinery Exhibition, Booths 289, 290 and 291

Winsor & Jerauld

MANUFACTURING COMPANY INC.

1268 EDDY STREET, PROVIDENCE, R. I. , U.S.A.

Builders of Fine Cloth Finishing Equipment Since 1900

ness in various acetate color combinations, and is recommended for the coloring of drapery fabrics, upholstery materials, furniture coverings, sportswear and dress goods.

"Pontamine" Diazo Scarlet P Conc. The brilliant scarlet shades produced by this dyestuff can be discharged to a good white on both viscose-process rayon and cotton. It possesses general good fastness characteristics and is suitable for dyeing materials used for dress goods, sportswear, play clothing and similar fabrics.

"Pontamine" Fast Blue BLL is a direct dyeing medium blue especially recommended where an unusual degree of resistance to light is required. It can be applied to all forms of cotton and viscose-process rayon by the usual methods. It is suitable for dyeing upholstery and drapery fabrics and is also of particular interest in the production of taupes and grays for automotive materials.

Du Pont Anthraquinone Blue 4GL for wool produces a greenish shade of blue that possesses generally good all-round fastness characteristics. It is used for dyeing women's wear materials, blankets, knitting yarns and is also suitable for dyeing nylon.

Dyestuffs Division, E. I. du Pont de Nemours and Co., Inc., Wilmington 98, Del.

For additional data, request item E-102, using business reply card on page 206.

Year Book Issued by Textile Institute

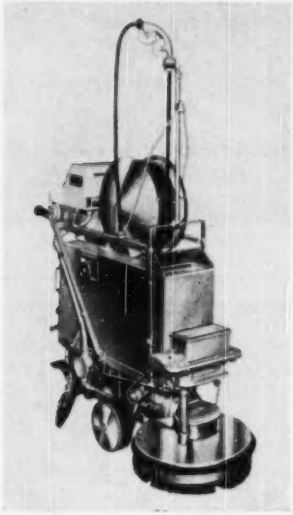
The Year Book of the Textile Institute for 1949-50 is now available, providing a comprehensive guide to the facilities available to students of textile technology and to the wide range of activities of the Institute.

Copies are available from the Textile Institute, 16 St. Mary's Parsonage, Manchester 3, England.

Gear Motor

A range of speeds of from 25 to 280 rpm is attainable with a recently announced 1½ hp gear motor. Additional features: Only two moving parts—the armature shaft and the output shaft; only four bearings—two ball and two roller; gears are worm type.

Century Electric Co., Gear Motor Division, 1806 Pine St., St. Louis 3, Mo. (E-301).



Scrubber-Vac No. 418P (Finnell).

All-Purpose Floor Machine for Small-Area Mills

A self-propelled combination floor maintenance machine, called the Scrubber-Vac No. 418P, was designed for floor areas ranging from 2,000 to 15,000 sq. ft. It applies the cleanser, scrubs, rinses, and picks up—all in a single operation. Equipped with an 18-inch brush ring, the machine handles wet and dry work.

Finnell System, Inc., East Street, Elkhart, Indiana. (E-118).

Refrigeration Compressors Feature Flexibility

Two new models of large reciprocating compressors developed to meet commercial air conditioning and refrigeration application needs from 100 to 150 hp in single units and designed to operate with a variety of refrigerants, have been announced.

The Model 5J40, a four-cylinder machine, using Freon 12, has a nominal cooling capacity of 100 tons for air conditioning and 65 tons for refrigeration, or using ammonia for refrigeration duty, 60 tons. The Model 5J60, a six-cylinder compressor, using Freon 12, has a capacity of 150 tons for air conditioning and 100 tons for refrigeration, or using ammonia for refrigeration duty, 90 tons.

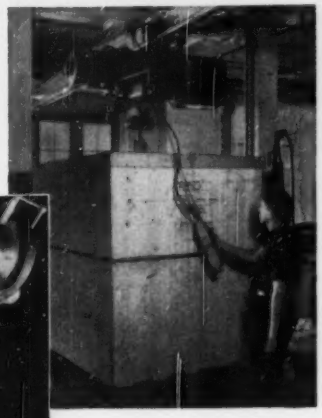
The two machines have identical bores and strokes, and the cylinder sleeves, valves, and other operating

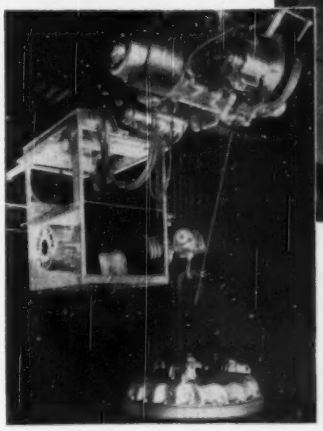
Bothered by a lifting or conveying bottleneck?

Reduce Handling Costs With the Right TYPE of Hoist

1. Floor-controlled

with the operator primarily occupied with other duties. For quick, efficient handling of relatively "short hauls" without disturbing surrounding operations.





2. Cab-operated

operator in cab, traveling loads at speeds of 500 f.p.m. or more—and occupying the best vantage point for accurate spotting or stacking.

Floor-controlled? Cab-operated? Both are production boosters—but one is best for *your* job. We would like to work with you to determine the right type for your particular service.

We have given our complete attention to the manufacture of both types of hoists—and a complete line of overhead cranes—for a good many years. So we approach "through the air" handling with an open mind and a great deal of experience. May we show you pertinent data on installations similar to yours?

Shepard Niles

CRANE & HOIST CORPORATION

Makes and sells all three lifting tools for airborne shop loads

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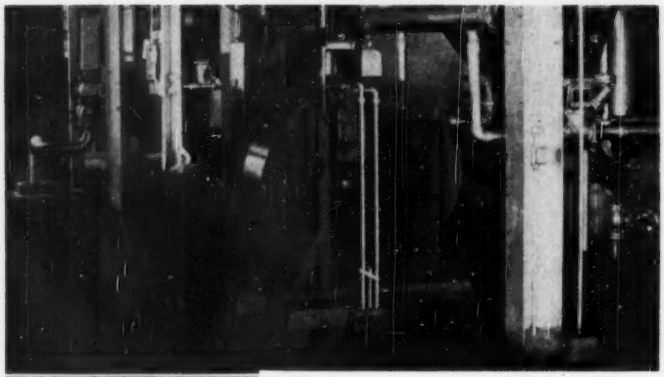


Courtesy, Albert Kahn, Associated Architects & Engineers, Inc., Detroit

"Buffalo" FORCED DRAFT FANS

"Buffalo" INDUCED DRAFT FANS

THEIR *Reliability* GIVES YOU *Lower* MAINTENANCE COST

● The "Buffalo" Mechanical Draft Fans shown here take a beating 24 hours a day, month after month, without quitting. The reason? "Buffalo" builds them *extra heavy*. The result? More dependable power—fewer repair timeouts. Above all, look for ENDURANCE in your power plant fans. You'll *get* it, when you specify "Buffalo".

WRITE for Bulletin 3750 for all engineering data on the complete choice of "Buffalo" Draft Fans.

First For Fans

BUFFALO "Buffalo" FORGE COMPANY

175 MORTIMER STREET BUFFALO, NEW YORK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

Branch Offices in All Principal Cities

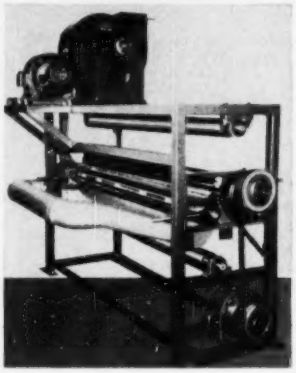
VENTILATING FORCED DRAFT | AIR WASHING COOLING | AIR TEMPERING HEATING | INDUCED DRAFT PRESSURE BLOWING | EXHAUSTING

parts are interchangeable, so that service is greatly simplified and reduced in cost.

Carrier Corporation, Syracuse, N. Y. (E-127).

New Chemical Feeder

A chemical feeder, capable of pumping against pressures of 300 lb per feed, is adjustable up to one gal-



Brushing Machine Produces Ash-Free Singed Fabrics

Designed for use in tandem with singeing machines, a new brushing machine is said to completely remove ash from cloth after it is singed.

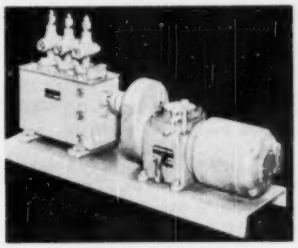
As a result of its efficient action, accumulation of foreign matter in the desize padder is prevented where this process follows the singeing operation. If cloth is to be wound dry, necessity for washing is eliminated, according to the manufacturer.

High vacuum ducts remove brushed off particles.

Although the machine is used in most installations after the singeing operation, the manufacturer states that it may be used before the singeing operation to raise fiber ends in preparation for singeing.

Industrial Heat Engineering Co., 121 Cleveland St., Greenville, S. C.

For additional data, request item E-117, using business reply on page 206.



Chemical feeder (Menzel).

lon of liquid per minute per feed.

Multiple units are available with any number of feeds, operated by rotary, motor, or lever drive. Pumping units may be constructed of various materials to meet special requirements.

The equipment automatically injects the chemical in exact proportion to the amount of liquid being pumped. Only the pumping unit comes into contact with the chemical, as the entire driving mechanism operates in a tightly enclosed oil filled case.

Menzel Division, Frontier Industries, Inc., Buffalo, N. Y. (E-112).

Emulsion Foam Killer

A recently developed product that reduces foaming tendencies in aqueous mixtures is believed to have textile mill application possibilities. Designated Emulsion Foam Killer, it is marketed in emulsion form; the creamy nature of the concentrated emulsion is stable and requires no lengthy preparation for use, it is claimed. Shipped in 55 gallon drums or 5 gallon cans. Testing samples also available on request.

Paisley Products, Inc., 1770 Canalport Ave., Chicago 16, Ill. (E-130).

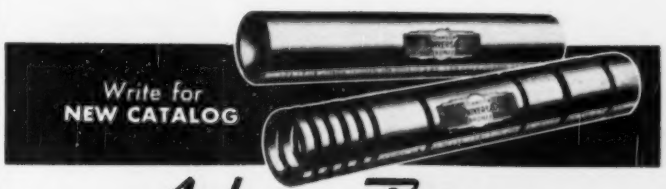
Coupling for Engine Drives Recently Redesigned

The Falk Airflex Coupling has recently been redesigned. Improvement in rubber composition and bonding have increased the torque capacity 20%, according to the manufacturer, and the hubs and adapter plates have been redesigned to facilitate disconnection and removal of the entire gland assembly. Redesigned components are interchangeable with equivalent components of other Airflex couplings.

The Falk Corporation, Milwaukee 8, Wis. (E-131).

JOHNSON BRONZE *BARS* are completely machined—outside diameter, inside diameter, and ends—and require only 1/64" cut to bring to size. You can see the savings in metal and machine work that this provides. Such a complete range of diameters is available that you may order any size you need. And, too, every bar is perfect, concentric and with no undersurface defects—entirely usable from end to end. They are cast from highest quality bearing bronze, an alloy that cuts easily, yet delivers the utmost in serviceability.

Johnson Universal Bronze is made in over 350 sizes. Cored bars are available in inside diameters from ½" to 7¾", and outside diameters from 1" to 10". The possible variations are great; for example, bars of 1" inside diameter may be furnished with outside diameters from 1½" to 4". The solid bars are made in a range of sizes from ⅝" to 8" diameters. Complete stocks are maintained by Johnson distributors from coast to coast, and by twenty-two Johnson Bronze warehouses.



Johnson Bronze
SLEEVE BEARING HEADQUARTERS
530 SOUTH MILL STREET • NEW CASTLE, PA.

WHAT THE TEXTILE MILLS ARE DOING

The **White-Tex Mill** property at Raeford, N. C., has been purchased by **Robbins (N. C.) Cloth Mills.**

West Point (Ga.) Mfg. Co. is planning to construct additional buildings to increase its research facilities at Shawmut, Ala.

A textile mill **"Textiles San Vicente"** has been constructed by the firm Emilio Isais of Quito, Ecuador, for the manufacture of all types of rayon goods. The mill is equipped with new machinery purchased in the United States, and is considered the largest and most modern mill in Ecuador.

New equipment is being installed by **J. P. Stevens & Co.** at its worsted weaving mill at Milledgeville, Ga.

Louis Steinzeig is president of **Summer Street Wool Co.,** Boston, Mass., which has recently been incorporated to operate a wool processing plant.

Monroe (Ga.) Cotton Mills are planning the construction of an addition to the plant, with contract expected to be let soon.

Textron, Inc. expects to install 480 new looms and auxiliary equipment in its mill at Manchester, N. H. Capacity of the dyeing and finishing plant will be doubled.

Texstyle Corp., Clifton, N. J., is engaged in an expansion program at its finishing mill which will increase the output about 25%.

The main offices of **Robbins (N. C.) Cloth Mills, Inc.,** are being transferred to Aberdeen, N. C.

Southern production of **Albert J. Bartson, Inc.,** will be centered at its new mill at Lavonia, Ga., the weaving plant in Charlotte, N. C., having been placed on the market.

Mill No. 2 of Rockfish-Mebane Yarn Mills, Inc., Hope Mills, N. C., has been purchased by the recently chartered **Brower Mills, Inc.** Carded yarns will be produced.

Contract has been let by **Morgan Cotton Mills, Inc.,** Laurel Hill, N. C., for a new addition to its mill, costing $172,780, exclusive of equipment.

The Oxford, N. C. mill of **Burlington Mills Corp.** has been converted from fine cotton to spun rayon yarn production.

Textron, Inc., has made arrangements for the erection of a one-story building at Humacao, Puerto Rico, which will be used for dyeing, sewing, and cutting of textile products.

Bigelow - Sanford Carpet Co., Thompsonville, Conn., has announced plans for production of a new line of carpets with synthetic fibers, to be placed on the market later in the year.

The shuttle bobbin department of **American Thread Co.** is now concentrated at its Willimantic, Conn.,

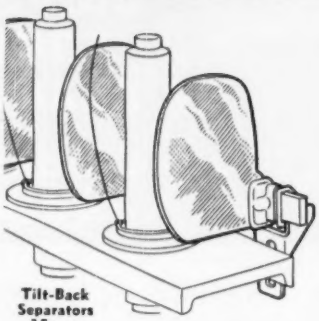
REDUCE "ENDS-DOWN"—CUT COSTS

WITH

WHITEHEAD *Permalite* ALUMINUM ALLOY SEPARATOR SHIELDS

Why burden your frames—and your overhead—with heavy, old-fashioned iron separator shields? Whitehead Permalite Shields are made of a special aluminum alloy—strong as steel but many times lighter. They mount right on the ring rail and can be flipped back for doffing . . . And with all their superiority, they cost no more!

EASY TO INSTALL. Simply drill and tap ring rail. We supply the shields and bar drilled to your gauge and ring count, together with proper support hangers and all screws and washers.



Tilt-Back Separators 15c up

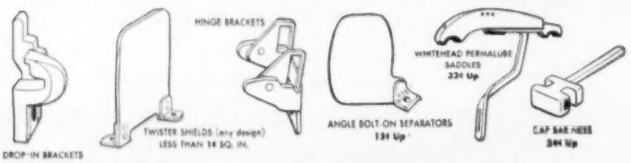
Stainless Steel Available for Rayon Spinning

EACH JOB ENGINEERED. When ordering specify rail width, thickness of back flange, gauge and number of rings in each rail on one side only, as 24-22-22-22-24.

ONLY WHITEHEAD PERMALITE SHIELDS OFFER THESE ADVANTAGES

- Fewer ends down: some mills report 27% less
- Use of lighter travelers which reduce power costs, wear of rings and travelers
- Solid polished blades (not slotted) which cause less wear on yarn, collect less lint and fly, resulting in smoother yarn
- Less vibration, wear of cams, worm gears and lifter-rod bearings
- Reduction of live weight—from as much as 300 lbs in old slotted steel shield assemblies to as little as 35 lbs per frame
- No attention after installation

OVER 4,000,000 IN USE BY MORE THAN 350 AMERICAN MILLS


HINGE BRACKETS
WHITEHEAD PERMALUBE SADDLES 32¢ Up
DROP-IN BRACKETS
TWISTER SHIELDS (any design) LESS THAN 14 SQ. IN.
ANGLE BOLT-ON SEPARATORS 13¢ Up
CAP BAR RISER 34¢ Up

IMMEDIATE DELIVERY FROM STOCK ON ALL ITEMS

PATENTED AND MANUFACTURED BY
WHITEHEAD ENGINEERING CO.
522 WEST PEACHTREE STREET, N.W.
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EXCLUSIVE DISTRIBUTORS
Meadows Manufacturing Co.
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*SEE YOUR MEADOWS MAN
Alabama, Georgia, Mississippi
R. L. Holloway, Box 4354, Atlanta, Ga.
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North Carolina
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Tennessee
Ed F. Brown, 417 Dale Ave., Knoxville, Tenn.
Northern Representative
Matthews Equipment Co., 93A Broadway, Providence, R. I.

mills. The No. 2 mill, where it was formerly located, has been sold.

Whitfield Spinning Co., Dalton, Ga., has arranged for the purchase of the former A. D. Julliard & Co. cotton mill at Dallas, Ga. It will be remodeled and operated as the Dallas division of the company.

J. P. Stevens & Co. is installing additional finishing equipment at its woolen mill at Dublin, Ga., where increased operations will be carried out.

Woolen and worsted goods will be manufactured by the newly chartered **Chauncey Woolen Co., Inc.**, 35 Harrison Ave., Boston, Mass. Sumner Cooper is president and treasurer.

Dodgeville (Mass.) Finishing Co., Inc., has let a general contract for a one-story addition to it mill, reported to cost approximately $50,000, with equipment.

Sunray Weavers, Inc., New Bedford, Mass., is now manufacturing woven rayon goods in a building formerly used by Pierce Bros., Ltd.

An expansion and improvement program has been completed by **Wamsutta Mills**, New Bedford, Mass., which is said to represent an investment of more than $2,000,000 in equipment and facilities.

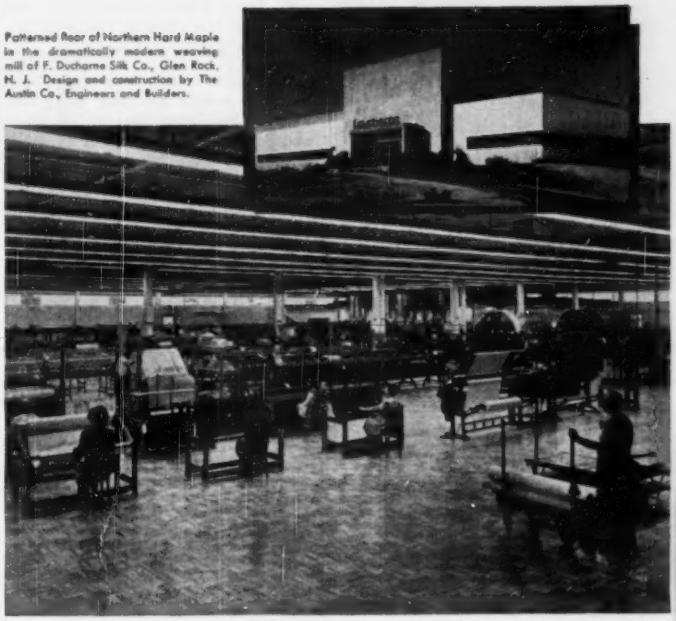
Paul Glimcher is president of the newly chartered **Glimtex Fabrics, Inc.**, 76 Hutchings St., Roxbury, Mass., which will manufacture rayon and other textile fabrics.

Roxbury Carpet Co., Saxonville, Mass., has plans under way for erection of a one-story addition to its plant.

A modern windowless-type mill is under construction by **Laconia (N. H.) French Dyeing and Finishing Corp.** The project is reported to cost over $400,000.

The newly chartered **Princeton Textile Printing Corp.** will operate a dyeing, bleaching, and finishing plant. Bernard W. Goldenberg, 12 East 41st St., New York, N. Y., is attorney and representative.

The **Narrow Fabric Co., Inc.**, Reading, Pa., is celebrating its fiftieth anniversary this year, having been incorporated in January, 1900, to manufacture brush bindings for the edges of women's long skirts. Its growth can be gauged by the fact that the first permanent building contained 25,000 square feet, and the



Patterned floor of Northern Hard Maple in the dramatically modern weaving mill of F. Ducharme Silk Co., Glen Rock, N. J. Design and construction by The Austin Co., Engineers and Builders.

IT'S **MODERN** FROM THE GROUND UP

...WITH **MAPLE** UNDERFOOT!

Modern styling, modern layout and modern equipment in textile plant planning are complemented ideally with everlastingly-modern Northern Hard Maple flooring. It *belongs*. Why? For every good reason! It's bright and clean and light-reflecting, and a mere brush-cleaning keeps it so. It offers no cracks and crevices to harbor dirt. It's pleasant, resilient, *home-like* underfoot, all day—makes folks feel better after a day's work. It's quickly refinished. It stands up under wheels and casters of heavy trucks and resists dents, scars and scuffing. It lasts a lifetime ("there's always a new floor underneath!").

See Sweet's

Latest (1950) editions — Architects 13g-7; Engineers 4j-21 — for full data and standard specifications.

Saves money, too! Second or Second-and-Better Grades, with *no sacrifice* of beauty, utility or endurance, cost appreciably less. Another tip: the narrower (1½-inch) width is available again—offers even greater tightness, smoothness (minimum expansion-contraction) and costs less. Write—

MAPLE FLOORING MANUFACTURERS ASSOCIATION
Room 391 — 46 Washington Boulevard
Oshkosh, Wisconsin

FLOOR WITH *NORTHERN* HARD MAPLE
BEECH AND BIRCH

present building comprises 223,000 square feet of floor space.

The New York, N. Y. office of **Dan River Mills** will be moved in June to 1507 Broadway.

The **Lenjo Fabrics, Inc.,** weaving mill at Elmira, N. Y., has been purchased by **Jan Mills, Inc.**

A one-story addition to the mill, costing approximately $245,000, is being planned by **Classe Ribbon Works, Inc.,** Anniston, Ala.

W. Roger Pratt of Utica, N. Y., has purchased the **Utica & Mohawk Cotton Mills'** plant No. 1 in Utica.

Construction is under way on a filament rayon weaving plant for **Textron Southern, Inc.,** at Williamston, S. C. The new plant is expected to cost between three and four million dollars.

An addition to the **Frank Ix & Sons** mill at Lexington, N. C., is being planned to accommodate the throwing plant.

DARNELL
CASTERS
• Wearing parts carbonized and hardened
• Patented Double Ball-Bearing Swivel
• Maximum floor protection means savings
• Will increase efficiency of employees
• Made in any size for any type of use
Write for Free Darnell Manual
DARNELL CORP. LTD.
LONG BEACH 4, CALIFORNIA
60 WALKER ST., NEW YORK 13, N.Y.
36 N. CLINTON CHICAGO 6, ILL.

Erwin Cotton Mills Co., Durham, N. C., has changed its name to Erwin Mills, Inc., to suit its broadened line of output.

Plans are under way for the erection of a one-story addition to the mill of **Puritan Weaving Co.,** Fayetteville, N. C., a subsidiary of Burlington Mills Corp.

The Raeford (N. C.) Cotton Mills have been purchased by **Robbins (N. C.) Cloth Mills, Inc.** It is understood that the new owners will institute modernization program, with a view to early occupancy.

Extensions and improvements in the storage building at the worsted yarn mill of **Wanskuck Co.,** Providence, R. I., are expected to be made shortly. The work will cost approximately $20,000.

The southern mills of **M. Lowenstein & Sons, Inc.,** have announced the opening of central offices at Anderson, S. C., for the purchasing and classing of cotton, and purchasing of mill supplies.

Plans are under way for construction of new swimming pools and bath houses for the employees of **Clinton Cotton Mills** and **Lydia Cotton Mills,** Clinton, S. C.

Construction of new opening and picking rooms at **Elk Cotton Mills, Inc.,** Fayetteville, Tenn. is nearing completion. Other expansion plans are under way.

According to present plans, the Oakland plant of **Kendall Co.** in Newberry, S. C., will be doubled in size after present construction program has been completed. A four-story extension of the present building will be erected, and new production machinery will be installed.

Installation of new machinery, plus improvements to the present building, will bring the cost of the modernization program in the Clara Plant of **Gastonia (N. C.) Combed Yarn Corp.** to approximately one million dollars. It is expected that operations at the plant, which has been closed for a year, will resume within the next several months.

Properties and business of the Apponaug (R. I.) Company have been acquired by **The Aspinook Corporation.**

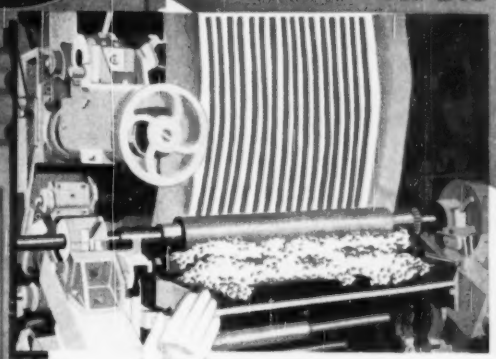
Plans are under way by **Chicopee Manufacturing Corp.,** Lumite Division, for an addition to its Unit No. 2 at Cornelia, Ga.

A NEW Textile Utility
Product of
Wide Application

with NEW Depuma*

AN ODORLESS, VISCOUS EMULSION . . .
FOR DYE LIQUORS AND PRINT PASTES

Here at last is the more effective, more efficient anti-foaming agent you've been looking for!



PRINT PASTES: Unlike ordinary de-foaming agents, **DEPUMA does not emulsify** when added to acid or alkaline liquors or print pastes. It has **no rate of evaporation.** When stirred in, it slowly rises to the surface, breaking the foam with amazing effectiveness. When added to print pastes, it does not affect the viscosity, thus preventing undesirable penetration during the printing operation.

SOAPING: DEPUMA also permits the use of larger amounts of detergents in soapers when desirable. Added to special, high-concentration soaping liquors, it breaks the foam **without interfering with the** detergent qualities. **DEPUMA prevents re-foaming of the liquor.**

For detailed information on this new and important addition to the A.A.P. range of superior textile auxiliaries, consult our nearest branch. A.A.P. technicians are always happy to be of service.

AMERICAN ANILINE PRODUCTS, INC.

50 Union Square, New York, N. Y. • **Plant: Lock Haven, Pa.**

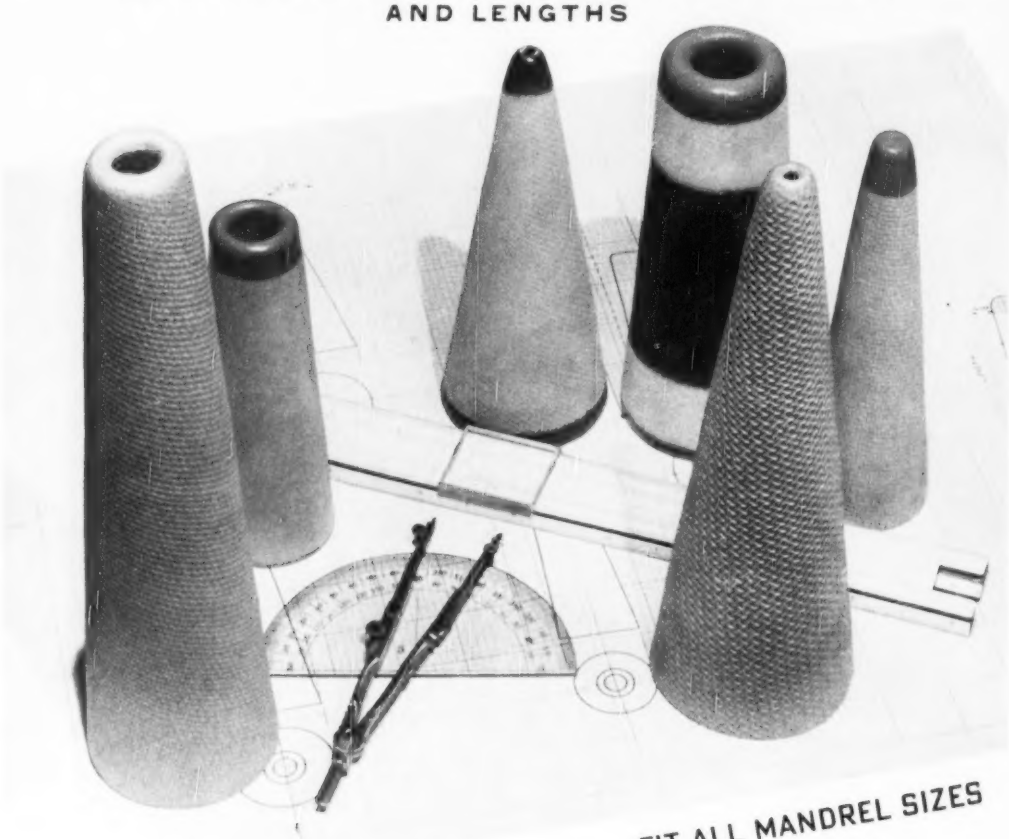
Branches: Boston, Mass. • Providence, R. I. • Philadelphia, Pa. Charlotte, N. C. • Chicago, Ill. • Los Angeles, Cal. • Chattanooga, Tenn. **Dominion Anilines & Chemicals Ltd.** • Toronto, Canada • Montreal, Canada

*Reg. U. S. Pat. Off.

SERVING THE TEXTILE INDUSTRY SINCE 1899

SONOCO CONE TAPERS

AND LENGTHS



FIT ALL MANDREL SIZES

High speed coning would be impossible without the uniform precision fit of a SONOCO Cone on the winding mandrel - the correct taper and length eliminating vibration. This precision manufacturing of paper cones is made possible by SONOCO'S 50 years of experience and research in design and engineering.

Standard cone tapers to fit standard winding equipment range from 3° 30' to 9° 36'. Standard lengths are also available in each taper.

Our technical service department is maintained to serve you in solving any cone winding problems that present variances from the recognized standards.

A MASTER CONE GAUGE IS USED TO CHECK INSIDE TAPER AND OVERALL LENGTH.

AUSPICES OF AMERICAN TEXTILE MACHINERY EXHIBITION ATLANTIC CITY MAY 8-12 1950 TEXTILE MACHINERY MANUFACTURERS' INSTITUTE, INC. TEXTILE MACHINERY EXHIBITION-TEXTILE MACHINE WORKS

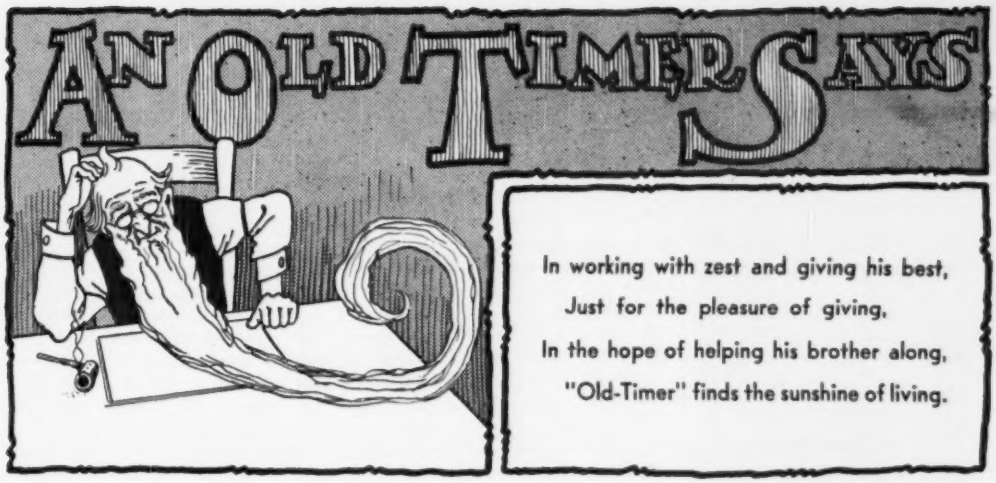
BOOTHS 71-72

sonoco KNOWS THE MANDREL PAPER CARRIERS REG. U.S. PAT. OFF.

SONOCO PRODUCTS COMPANY

BRANTFORD ONT | HARTSVILLE S C | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Imagination Precedes Progress

(A continuation of the discussion, "Can You Dream?" which began in the February issue.)

THERE are so many angles to developing and putting into practical use the faculties of Imagination, that it behooves a man to be constantly on the alert to discover these new angles as local conditions bring them about.

Had you ever thought about your human relations from this angle? First you must realize that everything you say to your operatives and everything your firm does for their welfare are not considered a voluntary action on your part nor on your firm's part. There are many angles which influence the operatives' opinion of anything you or your firm does for them.

Should your action come before or just after a meeting with union officials, they naturally think that meeting caused you to take the action you did. If labor trouble flares up at a mill near you or in the industry and you inaugurate some welfare program, raise wages or what not—well, if you are the student of human nature you should be then you know what goes on in the minds of your operatives.

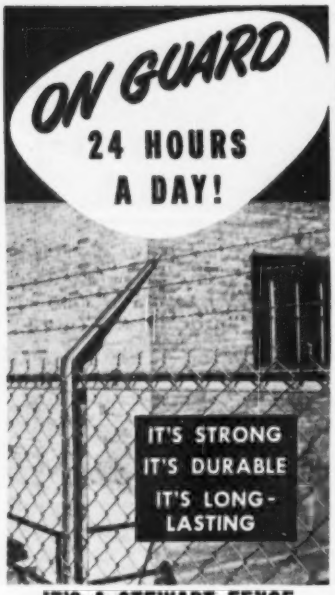
From such deductions it would seem that neither you nor your firm gets credit for most anything you do for the welfare of your operatives. *That,* we very much regret to state, is almost true. That is, true where the feeling exists in employees that you are the *company,* and the company is something apart from them. When they have no feeling of being a part of the company—That's bad, fellows, and you should be exerting every possible effort to eradicate such a feeling in your employees.

And we hear you say: Is that human nature? Oh! yes, brother; that is one of the ironies of human nature. It does not always work as it should. If it did then you would not have the job you have. If all employees would run their machines as they should—the way they *know* they should—then what in heck would we need overseers, superintendents, and managers for?

And as further proof of this angle of human nature, of this lack of appreciation, we believe *you* have a little, probably more than a little of this same "Bump" in your cranium, too. How many times have you said or thought when a union official makes some concession, that he is only doing so to pave the way for something else he is going to demand.

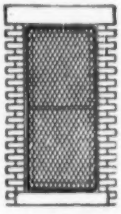
Okeh, now, since we realize most all operatives are prone to misjudge your efforts pertaining to their welfare, what can you do about it? Understand we say *most* all operatives; not *all* by any means. Then why not use those loyal employees who do feel that they are a part of the firm, as ambassadors, so to speak, to carry your message to the other employees?

The pastor of the church—the doctor who serves your people—the merchant who comes in daily contact with the wives—are you good friends with these people? Have you ever sat down for a heart to heart talk with these peo-



IT'S A STEWART FENCE

Notice the sturdy All-Beam framework ... the extension arm and line post—an integral unit. Stewart Non-Climbable Chain Link Wire Fence, the heaviest and strongest manufactured, features a number of exclusive structural advantages you can't afford to overlook. Write for folder "Here's why you should buy a Stewart Chain Link Wire Fence."



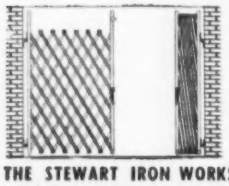
WINDOW GUARD
(Wire or Iron)

Made with round or channel frames to fit any size or shape opening. When requesting prices please give measurements and send diagrammatic sketch.

WIRE MESH PARTITIONS—Sectional

Fit any height or width. Easily and quickly erected. When writing for prices please give all measurements involved.

STEEL FOLDING GATES



Made in single or double gate construction to fit any width opening. Prices on request. Please give width and height of opening.

THE STEWART IRON WORKS CO., INC.
1724 Stewart Block Cincinnati 1, Ohio

Stewart IRON and WIRE FENCES

ple and explained to them how difficult it is for you to get your operatives to believe that you really have their interests at heart—that if there was no union nor another mill in hundreds of miles you would still be doing the things you are doing for their welfare. Or would you?

You do have some section men who are intelligent and loyal. And you have quite a few operatives to whom you can talk and who in turn can talk to their fellow operatives. Are you using them? If you do not use every means possible to *increase* the number of loyal employees, you are not only neglecting your duty as an operating executive, but you are passing up the wonderful opportunity of preparing yourself for one of the high salaried positions which are going begging today for lack of men to fill them.

Imagination Precedes Progress

Let us quote a few more points on imagination that the Chrysler Corp. brings out in the manufacture of Plymouth, Dodge, Desoto, and Chrysler cars, heating systems, refrigeration, and numerous other products: (1) "Imagination is the directing force, etc." (2) "Imagination meets emergencies before they arise: it conceives safeguards in the engineer's mind, draws them into plans, etc., etc." (3) "Imagination *foresees* the driving conditions you will meet and engineers protection into the very design of our cars" (quoted from *Saturday Evening Post*).

What are you doing, brother, to apply your Imagination to textile manufacturing?

Spinning Fur Blends on Cotton System

(*Continued from page* 94)

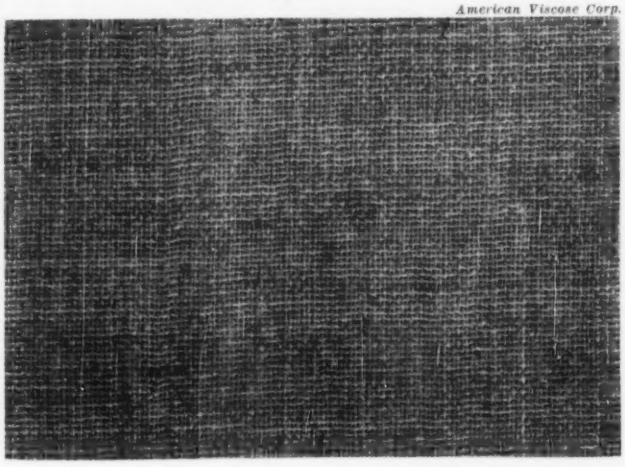
a comparatively high twist. Weaving yarns made from fur blends fare better with twist multiples ranging from 4 to 5, while 3 to 3½ is adequate for knitting yarns.

A certain amount of shedding may take place at higher spindle speeds. Unfortunately, when the fur falls out in all processes from the cards on, there is no way of conveniently feeding it back into the various processes. For this reason alone, treated fur fibers offer sizable savings due to their greater adaptability to spinning.

Weaving. Sizing of fur blends in the warp form presents some

This women's wear crepe (magnified three times to show fur fibers) contains 70% viscose, 10% wool, and 20% fur fiber.

American Viscose Corp.



problems since animal hair does not respond to most of the normal sizing ingredients. The approach, therefore, is to use concentrations of adequate sizes having greater affinity for those components of the blend other than fur. Efficient weaving seems to be limited to counts coarser than 30s due to the low tensile strength of the blend. However, weaving does not create any peculiar problems. Reasonably high relative humidity as maintained for spun rayon is essential. Under these circumstances, open weaves such as twills or satin can be run with normal efficiency. Taffeta weaves are more troublesome.

The only precaution which must be observed in finishing or dyeing is to prevent liquors approaching the alkaline side. The fur is easily tendered and may even be totally dissolved by caustics.

These blends radiate vitality and warmth in the fabric construction. Fur cloth is distinguished by appealing hand and draping virtues. Coupled with these highly desirable features are the distinctive color effects possible. Fur blended yarns and fabrics are a definitely salable item.

Southeastern AATCC Schedules Outing

Members of the Southeastern Section of the American Association of Textile Chemists and Colorists are planning a summer outing to be held at Radium Springs, Ga., on June 9th and 10th. This is the first occasion of this sort to be held by the Southeastern Section, and plans are made to have a full schedule of fun and entertainment for all guests, including ladies.

Registration will begin Friday at noon, June 9, and everyone is urged to arrive as soon as possible Friday afternoon in order to participate in all activities on the program.

Members of the Piedmont and South Central Sections, prospective members and friends are invited and urged to attend. Further information is available by addressing Howard McCamy, Pepperell Manufacturing Co., Lindale, Georgia, chairman of the outing committee.

Newsworthy onyx Chemicals
FOR TEXTILE PROCESSING

Occonaze LH—Dual Purpose Enzyme for Rapid Desizing of Cotton, Cellulosic and Mixed Goods

Occonaze LH is a proteolytic *and* amylotic enzyme offering the highest degree of heat stability in solution. Because it can be used at high bath temperatures to get faster action, Occonaze LH is particularly well adapted to continuous desizing.

On either batch or continuous operations, desizing with Occonaze LH follows the usual procedure of saturating the cloth, followed by a digestion period during which the starches and/or proteins are solubilized. You stock one desizing material, since Occonaze LH is both proteolytic and amylotic.

When you use this new desizing enzyme, you will get no streaking or blemishes. Supplied in powder form, it is much less bulky than liquid compounds—requiring less storage space. It is stable in storage, unlike liquid enzyme products.

Onyx Technical Data Sheet No. 22-T covers the characteristics and uses of Occonaze LH. Write for a copy.

Salient Data on Occonaze LH

Constitution . . . Biological material in a buffered, stabilized formula. Physical State . . . Powder: 100% through 60 and 95% through 80 mesh. Compatibility . . . Hard water—compatible. Acids and alkalies—incompatible. Stability . . . Powder: indefinitely stable in storage at room temperature. Solutions: highly stable to heat. Solubility . . . Active ingredients are completely soluble in water.

DULLATONE* DG . . . The Most Satisfactory Duller Ever Produced for Dark Shades

With the successful development of this new and superior duller for dark shades, Onyx rounds out its lines of dullers for all types of rayon, acetate and nylon piece goods. Dullatone CA long ago established itself as the outstanding duller for light shades, producing dull, soft tones without imparting a harsh hand. Now the same effective treatment is available for dark shades. Can be run for long periods without build-up on rolls or streaking.

XYNOFIX FL . . . Your Guarantee Against Bleeding Prints and Against Dye Migration Where Drying is Delayed

When you use Xynofix FL in the final print wash you will have no trouble with bleeding—even on colors that have been bad offenders in the past. Xynofix FL in the final rinse after dyeing prevents migration of dyes wherever dyed goods have to be held over in trucks due to delayed drying schedules.

You can easily satisfy yourself as to the complete dependability of Xynofix FL, because a test run is readily and quickly made. Get in touch with us if you are interested in such a test.

Xynofix FL is covered in Onyx Technical Data Sheet No. 23-T.

NEUFUME DMH . . . for Protection Against Gas Fading which Resists Dry Cleaning and Laundering

Neufume DMH has been thoroughly tested and proved in the field, and is already in wide use as a durable preventative of gas fading. It is added directly to the bath with the dyestuff, and does not cause any increase in dyeing time. Neufume NS can be used where durability of protection is not essential. It is used in the finish bath to give a high order of resistance to gas fading, which, however, is non-durable.

*Trade Mark Reg. U. S. Pat. Off.

onyx

ONYX OIL & CHEMICAL COMPANY, JERSEY CITY 2, N. J.
CHICAGO · BOSTON · CHARLOTTE · ATLANTA

PERSONAL NOTES

ABOUT MEN YOU KNOW

J. C. Godfrey, vice-president of Calhoun Mills, Calhoun Falls, S. C., has been elected chairman of the South Carolina Division of the Southern Textile Assn. **W. M. Allison**, superintendent of Startex Mills, Tucapau, S. C., will continue to serve as secretary of the organization. **Joe Carter**, assistant superintendent of Startex, was elected chairman of the Carding and Spooling Section, and **O. A. Mace**, superintendent of Arkwright Mills No. 2, Spartanburg, S. C., continues as chairman of the Weaving and Slashing Section.

William Midgley has been made resident manager of Shawsheen Mills, Lawrence, Mass., succeeding Percy L. Schutt, retired. Mr. Midgley was formerly with the Fulton (N. Y.) Mills of the American Woolen Co., which owns the Shawsheen Mills.

James M. Busher, formerly superintendent at Shawsheen, is now assistant resident manager of the company's Wood Mill in Lawrence, Mass., succeeding **Christian A. Weissner**, who has gone to Ayer Mill.

Alfred A. Ernst, textile technician for the Susquehanna Mills, Sunbury, Pa., went there from the Carwan Woolen Corporation.

Robert Whewell has become assistant to the treasurer at Bourne Mills, Fall River, Mass.

Robert D. Williams was recently elected president of Dwight S. Williams Co., Inc., and Hillsboro (N. H.) Hosiery Mills, succeeding his father, the late Dwight S. Williams. **Gordon H. Reifsneider**, vice-president of the Williams company, became secretary also, and **Miss M. L. Kohl** was reelected treasurer. **Duane B. Williams** became vice-president of the Hillsboro mill, while retaining his position as assistant treasurer. **Eugene B. Williams** was reelected treasurer.

George Asnip of the Judson Mill in Greenville, S. C., has succeeded **Frank J. Aiken**, resigned, as manager of the Gerrish Milliken mill at Pendleton, S. C.

George M. Wright, Jr., formerly with Gaffney Manufacturing Co., is now superintendent of Plymouth Manufacturing Co., Inc., McColl, S. C.

Nathaniel E. Duval, formerly general sales manager at Massachusetts Mohair Plush Co., has been appointed vice-president and a director of the company. His headquarters will be at the company's Chicago offices in the Furniture Mart.

Mr. Duval

Stephen McClellan, president of Specialties, Inc., was recently unanimously elected president of the Institute of Textile Technology, Charlottesville, Va.

Eugene A. Popp is now overseer of dressing at Bell Company, Worcester, Mass., coming from Miron Mills.

Thomas Duffy, formerly with Blackstone Plush Mills, is now with Miron Mills, Clinton, Mass.

Several faculty members of the New Bedford (Mass.) Textile Institute have been advanced in grade in compliance with established requirements for colleges granting degrees. **George Walker** advanced from principal to president; **John E. Foster** and **Francis Tripp** from head textile school instructors to professors; **Fred Beardsworth, Edward H. Cloutier, James I. Giblin, Thomas H. Gourley, Frank Holden, John C. Broadmeadow** and **Edmund J. Dupre** to associate professors; and **Adam Bayreuther, Louis Pacheco, Jr.**, and **Antone Rodil** to assistant professors.

Mathias St. George is now overseer of spinning at D. McIntosh & Sons, Holyoke, Mass. He was previ-

STODGHILL & COMPANY

TEXTILE CHEMICALS

ATLANTA

"THE SIZE THAT SATISFIES"

ously at the Holyoke mill of Berkshire Fine Spinning Associates.

Elmer Herion has been appointed night superintendent at Stafford & Company's two mills in Philadelphia, Pa.

Arthur Crossley, formerly with Guild-Linwood Mills, is now assistant manager of the Milltown, N. B., mill of Canadian Cottons, Ltd. **Frank Crossley**, who was superintendent at the Dover, N. H. plant of Esmond Mills, is now overseer of carding at Milltown. **James Harrison** and **G. Martin**, formerly second hands, have been promoted to overseers of filament weaving and blended yarn weaving, respectively.

J. Rollins Jolly, general superintendent of the Georgia mills of the American Thread Co. for the past

Mr. Jolly

three years, has been appointed director of industrial relations for the southern division of the firm.

Charles A. Thornhill is now overseer of dyeing at the Peace Dale (R. I.) mills of M. T. Stevens and Sons Co. He was formerly with Paton Manufacturing Co. Ltd., Sherbrook, Quebec.

John H. Todd of Washington, D. C., has been retained by the National Cotton Council as legislative counsel in its Washington offices.

At the annual stockholders meeting of Pacific Mills, **Richard L. Bowditch** and **John T. Noonan** were elected to the board of directors. Mr. Bowditch is president of C. H. Sprague & Sons Co., Boston, Mass., and Mr. Noonan is a member of the Boston law firm of Herrick, Smith, Donald, Farley & Ketchum.

Chadbourn Hosiery Mills, Inc., Charlotte, N. C., has announced the resignation of **W. W. Sharp, Jr.**, as vice-president and director.

Ellison S. McKissick, president of Alice Manufacturing Co., will serve the unexpired term of Earl Freeman, deceased, as fourth vice-president of the Quartermaster Association, it was recently announced.

The appointment of **Dr. Herschel Herbert Cudd** as head of the chemical sciences division of the Georgia Institute of Technology Engineering Experiment Station was recently announced by Dr. Gerald A. Rosselot, director of the station. Dr. Cudd was former director of the Lantuck division of West Point Manufacturing Co.

Thomas M. Denning is celebrating his fiftieth anniversary as superintendent of Wiscassett Mills Co., Albemarle, N. C. He joined the firm in March, 1900 after several years of experience at other mills.

At a recent meeting of the American Society for Testing Materials, **William D. Appel** of the National Bureau of Standards was elected chairman of Committee D-13. **Dr. Frederick Bonnet** of American Viscose Corp. was made first vice-chairman; **Stewart J. Hayes** of Ludlow Manufacturing Sales Co., second vice-chairman, and **W. H. Whitcomb** was re-elected secretary.

Frederick Hubach is now associated with Princeton Knitting Mills, Waterbury, Conn., in charge of development of fabrics made of wool and nylon yarns. Mr. Hubach was formerly with E. I. Du Pont de Nemours & Co.

Frank S. Clark, formerly with Ansonia (Conn.) O & C Co., has be-

Mr. Clark

come associated with the elastic fabrics division of Russell Manufacturing Co., Middletown, Conn.

Joseph U. Ryan has left M. T. Stevens and Sons North Andover, Mass., plant to become overseer of dyeing at Alworth Woolen Mills, Duluth, Minn.

Mooresville (N. C.) Mills have announced the appointment of **C. A. Barrett**, formerly at Woodside Mills,

Anderson Shields are dependable protection against chipping, splitting, and breaking of spools, bobbins, and paper caps. Even the most minute details are carefully worked out to make Anderson the highest in precision, the smoothest in finish, the best in performance. The Anderson Emblem is your assurance of the finest shields you can buy.

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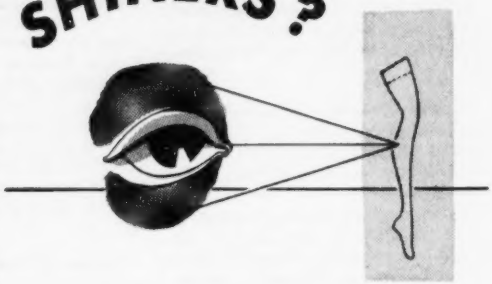

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as superintendent of weaving. **Lefon F. Frye** is the new superintendent of carding and spinning. Mr. Frye was previously located at the Cornelius, N. C., plant of Frank Ix & Sons.

J. Mac Cheatham has been elected to succeed his father, John H. Cheatham, deceased, as president of Dundee Mills, Inc., Rushton Cotton Mills, and Lowell Bleachery South, all located in Georgia. Mr. Cheatham was also made treasurer at Rushton Mills, and **Carl H. Richardson** was elected vice-president. **W. W. Norman** was re-elected vice-president of Dundee Mills, and also assumed the position of treasurer. **Joseph W. Brady** was re-elected vice-president in charge of sales. At Lowell Bleachery South, **George N. Murray** was re-elected vice-president and appointed treasurer.

Washington Mills Company has announced the appointment of **John**

Mr. McAlister

W. McAlister, Jr., to succeed **D. J. Whitaker**, retired, as superintendent of its Fries, Va., mill.

At a recent meeting, **Frank H. Hillery** of Wellington Sears Company was elected to succeed **William C. Planz** as chairman of the Textile Industry Committee on Foreign Trade. **Alonzo F. Bonsal** of Joshua L. Baily & Co. was elected vice-chairman, and **F. Sadler Love**, secretary-treasurer, American Cotton Manufacturers Institute, was chosen treasurer. **John W. Murray** was reelected secretary.

M. Lowenstein & Sons, Inc. have announced the election of **Thomas J. Osborne** and **Robert J. Linial** as vice-presidents of its subsidiary, Lane Cotton Mills Co.

Luther H. Hodges has retired from active service with Marshall Field and Co. to accept an appointment as chief of the industry division of ECA in western Germany. **M. C. Mumford**, vice-president of the company, becomes general manager of Fieldcrest Mills, with headquarters in New York.

Philip F. Ripley, Andover, Mass., is one of eight chemists and chemical engineers to be honored this spring as fifty-year members of the American Chemical Society. Mr. Ripley was formerly chief chemist of the American Woolen Company.

Obituaries

Herbert W. Fitzroy, 76, retired superintendent of the LaFrance Industries Philadelphia, Pa., plant, died recently after a short illness.

At the age of 53, **Fred Barnett Hillburn**, superintendent of Beaunit Mills, Inc., Lowell, N. C., died on March 20.

George A. Dean, manager of the Spartanburg, S. C., office of A. E. Staley Manufacturing Co. for thirty years, died on March 22.

William G. Manchester of the Charlotte, N. C., division of Universal Winding Co., died suddenly on March 26.

Sanders Holmes Smith, 68, died on March 9 in Rome, Ga. Mr. Smith was formerly associated with the Pepperell Manufacturing Co. in Lindale, Ga.

Erhart Alfred Ruegg, president of Northumberland Corp. and its affiliated companies, Chenango Textile Corp., Louis Roessel & Co., and Wyoming Textile Co., died of a heart attack on March 5 at the age of 55.

While on a round-the-world cruise, **Hendricks Hallett Whitman**, 66, retired vice-president of William Whitman Co., died in Nice, France.

George B. Pfingst, 76, died recently in Fort Lauderdale, Fla. Mr. Pfingst before his retirement had been associated with the textile industry for about 50 years.

J. Floyd Childs died recently in Atlanta, Ga. Mr. Childs was southeastern representative of Howard Bros., Worcester, Mass., and was at one time in the editorial department of TEXTILE INDUSTRIES when it was known as "Cotton."

On March 12 **Bradley Canfield Algeo** died in Oreland, Pa., at the age of 79. Before his retirement in 1940, Mr. Algeo had been assistant director of the Philadelphia Textile Institute.

Richard L. Thompson, general manager of Sulloway Hosiery Mills, Franklin, N. H., died recently at the age of 47.

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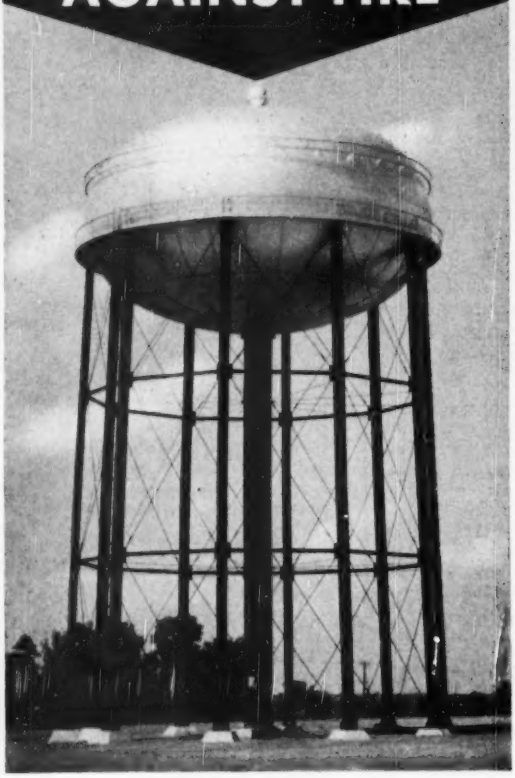

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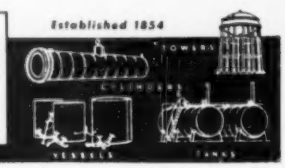

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Technical Staffs for Associations

(*Continued from page 73*)

change information without disclosing mill secrets. In the first place, most top executives who are active in the state and national associations have grown away from the technical questions a great deal and, therefore, are not qualified to discuss them. The next thing is that our executives have so much to do in looking after adverse legislation and handling other such matters that they have not the time to devote to these questions.

The only way I see that it could be done would be by the organizing of a technical division. Some states already have a cotton division and personnel division, but these two were organized because there was no other association doing this work. I think that if the top executives want more of this done, they should get in behind the Southern Textile Association and strengthen it, but I am very definitely of the opinion that there is no place for these in the state and national associations.—Pres. & Treas.

"Should Not Combine Work." I think it would be fine if these associations would sponsor a meeting at least once a year and possibly twice for the sole purpose of discussing manufacturing problems and new machinery, but I do not believe these discussions should be held at the same time of the regular annual meetings. Since the majority of the men who attend these annual meetings are owners or officers of mills and usually have someone else connected with their organization who is directly responsible for manufacturing, I do not believe they would be too interested in discussing technical problems.

In many cases it is doubtful if they could bring to these meetings their superintendents or the person directly in charge of manufacturing, as it is always necessary for some one to stay on the job and look after the operation of the plant.

I think that the set-up in one state is very good. Superintendents and key men hold their meetings twice a year at which time technical problems are discussed, and the association for management meets once a year to discuss matters which are of interest to all mills regardless of what type of textiles they are manufacturing. I just don't believe that it will be advisable to combine the work which both of these associations are attempting to do and have one meeting for both groups.—Manager.

"Pay More Dues." In order to provide technical service for their members, state and national textile associations would find it necessary to add one or more technical men to their staffs, because, as far as this writer knows, none of our associations is now equipped to perform this service. Since in some of the textile states the staff of the state textile association consists only of one executive and one secretary-stenographer, the addition of technical personnel would be impractical if not impossible under present budgets. There has been no inclination on the part of members of state associations to pay more dues in order that budgets may be increased. Thus, from the standpoint of state associations, I believe that the idea reported in TEXTILE INDUSTRIES is impractical.

In a lesser degree the same handicap presents itself when the positions of the several national associations are considered. At least one of the national associations includes in its membership

(*Continued on page 207*)

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Here is the "cream of the crop" of literature on textile subjects as prepared by TEXTILE INDUSTRIES advertisers to aid in mill operation and management. These reference books and catalogs are free for the asking and there is no obligation involved. Read through the list carefully for booklet on the subject or New Equipment in which you are interested. Then fill in the numbers of those desired on the coupon on page 206 and mail it to TEXTILE INDUSTRIES. ("First Listings" shown below are not confined solely to TEXTILE INDUSTRIES advertisers).

This service is restricted to those engaged in operation and management of textile industries

First Listing of New Publications

5-1. Air Compressors. Booklet describing the new L Design air compressor available. New airflow, intercooler, cylinder, frame and running gear design fully discussed with cut away diagrams showing parts. Electric drive described. Ingersoll-Rand Co., New York 4, N. Y.

5-2. Vibration Control. Various types of vibration isolation media-springs, rubber, and cork materials are discussed in new bulletin G-102. Fifty typical machine and equipment applications are tabulated with recommendations for proper types of vibro-isolators for highest efficiency. The Korfund Co., Inc., 48-56E 32nd Place, Long Island City 1, N. Y.

5-4. Cement Floors. Illustrated 8 page catalog describes the Kalman precision method of building in maximum hardness and density uniformly over floor areas. Service characteristics adaptable to a wide variety of requirements fully outlined and simplified maintenance practice suggested. Kalman Floor Co., 110 E. 42nd St., New York 17, N. Y.

5-5. Aluminum Paint. Comprehensive 32 page brochure for industrial users of aluminum paints. The booklet divides industry and business consumers of aluminum paint into these classifications: (1) for metal, concrete and masonry and similar non-absorbent surfaces; (2) for weather exposed wood; (3) for interior heated surfaces and decorative uses. Profusely illustrated, over 30 photographs showing proven application of aluminum paints. Aluminum Co. of America, 661 Gulf Bldg., Pittsburgh 19, Pa.

5-6. Humidifier Bulletin. A new four page bulletin describes the Daffin Hum-O-Zone is announced —photographs showing uses of the humidifier in various industries, specifications and cut-away photographs of Hum-O-Zone. The Air Conditioning Division, Daffin Mfg. Co., Lancaster, Pa.

5-7. Industrial Elevators. New edition of 36 page booklet includes low priced portable elevators in three standard models of 500, 1,000 and 2,000 lb. capacity. Booklet describes wide range of applications, characteristics in detail, safety features and details of construction. Barrett-Cravens Co., 4609 S. Western Blvd., Chicago 9, Ill.

5-8. Water Softeners. Comprehensive bulletin WC-102 on recent developments in Hot-Process water softeners available. Boiler plant troubles caused by impurities in water, methods of treating to eliminate impurities, advantages of Hot-Process method, and chemistry of Hot-Process water softening fully discussed. Diagrams of Hot-Process designs and flow charts with photographs of installations. Grover Water Conditioning Co., 216 W. 14th St., New York 11, N. Y.

5-9. Asphalt Mastic Flooring. The acid resisting, waterproof, slip-proof and long wearing qualities of Rulon Asphalt Mastic floors are fully discussed in their new illustrated catalog. For maintenance men and others interested in "Tailor-Made" floors laid to meet specific needs. Ralph V. Rulon, Inc., 3900 N. 2nd St., Philadelphia 40, Pa.

5-10. Nylon Spinning Bands. New folder describing "Blue Jay" bands made from Du Pont Nylon for spinning, carding, twisting and spooling. Longer life, less slippage, no loading up lint, and not affected by oil or moisture discussed with controlled stretch performance described. Textile Banding Co., Athens, Ga.

5-11. Textile Trucks. New booklet describing doff boxes, frames and trucks, yarn, waste, platforms, conditioning, steel lap, fiber, utility trucks, etc.—uses and description of each type. Excel Textile Supply Co., Lincolnton, N. C.

5-12. Chemical Motors. Booklet B-4687 describing the new Life-Line chemical motors for operation where corrosive fumes and liquids are encountered is available. Internal construction features, external treatment for maximum corrosion resistance described. Westinghouse Electric Corp., P. O. Box 2099, Pittsburgh 30, Pa.

5-13. Drying Cylinders. Bulletin No. 2 tells how to reduce warm up time on slashers, dry cans and other textile dryers. New Sarco system of air venting and draining rotating cylinders. Sarco Co., Inc., New York, N. Y.

5-14. Type B. C. P. Exchangers. Booklet describes Ross Type B. C. P. Exchangers—Marine-born design which now benefits all industries, copper and copper alloy construction; removable tube bundle construction; packed floating head; higher thermal efficiency fully described cutaway diagrams and specifications. Ross Heater and Mfg. Co., Inc., Buffalo 13, N. Y.

5-15. Fluorescent Yarns. Brochure on the uses and licensing of Coldfire Daylight Fluorescent Yarns. "Brightest colors in the world" described, with many items manufactured from this material discussed. Aberfoyle Mfg. Co., Philadelphia, Pa.

5-16. Caustic Soda. A new 48-page book is now available, fully illustrated and covers every phase connected with the manufacture, economics, properties, handling and application of the product. Mathieson Chemical Corp., Baltimore 2, Md.

5-17. Maintenance Materials. A new pamphlet describing Stonecrete, Intecrete and Chemicrete. These products for repairing, resurfacing, increasing resistance to wear and for case hardening the surface of concrete floors fully described. Hydrite which permanently waterproofs any masonry surface also discussed. The Hultscrete Co., Charlotte, N. C.

5-18. Coolite Glass. Catalog describing increased productivity and lower maintenance costs in industrial and other buildings through the use of heat absorbing and glare reducing Coolite Glass. Heat and light transmission tables, along with complete specification data included. Mississippi Glass Co., St. Louis, Mo.

5-19. Anniversary Brochure. Fletcher Works, Inc., manufacturer of Narrow Fabric Looms, Textile Extractors, Chemical Centrifugals and Throwing Machinery have published a brochure on the 100th Anniversary of their founding. The brochure gives a brief resume of their history, personnel and products. Fletcher Works, Inc., Philadelphia, Pa.

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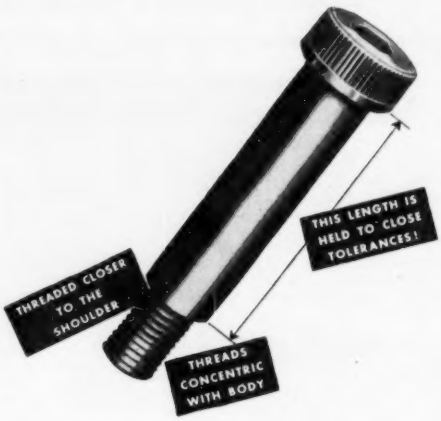

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GENERAL ECONOMIC, MANAGEMENT . . .

4. HOW FACTORING CAN INCREASE PROFITS—Describes how factoring works out in keeping clients' capital liquid and attitude of factor toward checking credits, including typical balance sheet.—COMMERCIAL FACTORS CORP., New York City.

5. FACTORING AND FINANCING — Illustrated booklet on how factoring works, cost and credit information.—TEXTILE BANKING COMPANY, New York, N. Y.

6. "WASTE REDUCTION AND CONTROL"—19-page illustrated booklet giving primary waste factors; how to calculate cost of departmental waste; actual waste figures from mills; contains survey of waste practices. — SOUTHEASTERN ENGINEERING CO., West Point, Ga.

10. "LABOR AND MANAGEMENT BENEFIT BY INDUSTRIAL ENGINEERING PRINCIPLES"—4-page illustrated folder outlining principles of industrial engineering as they apply to textiles.—AMERICAN ASSOCIATED CONSULTANTS, INC., New York, N. Y.

11. FLETCHER JUNIOR "SUPER-SELF-BALANCING" EXTRACTOR—Illustrated folder describing this new extractor with the highly efficient self-balancing arrangement which uses steel springs instead of rubber buffers.—FLETCHER WORKS, INC., Philadelphia, Pa.

12. CONDENSED LISTINGS—8 page pocket sized booklet listing by plant flow the machinery and mill supplies available. Designed to help purchaser in grouping his orders to greatest advantage.—ATKINSON, HASERICK & Co., Boston, Mass.

13. BROCHURE describing financial service to speed turnover of working capital; credit service for sales expansion and credit loss elimination.—WILLIAM ISLIN & CO., INC., New York, N. Y.

14. TEXTILE WEIGHT CONTROL—Forms 2009 and 2010, showing how Toledo Printweight weight records cut costs by eliminating human errors at the scales. Special purpose scales for the textile industry fully discussed.—TOLEDO SCALE CO., Toledo, Ohio.

16. TEXTILE RESEARCH — Booklet describing Research Department's commercial scale facilities for cotton spinning, worsted spinning, etc. Explains organization and functions of Department.—AMERICAN VISCOSE CORP., SYLVANIA DIV., New York, N. Y.

PLANT AND PLANT MAINTENANCE . . .

102. "TANK TALK"—Sixteen page booklet of illustrations showing various types of elevated steel tanks constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels, cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc., said.—R. D. COLE MANUFACTURING COMPANY, Newnan, Ga.

103. HUMIDIFICATION, EVAPORATIVE COOLING—Bulletins available displaying AMCO automatic selfcleaning atomizers, controls, and evaporative cooling equipment.—AMERICAN MOISTENING CO., Providence, R. I.

107. FINNELL SCRUBBERS — Illustrated leaflets describing and giving specifications for the new Finnell floor scrubbing machines.—FINNELL SYSTEM, INC., Elkhart Ind.

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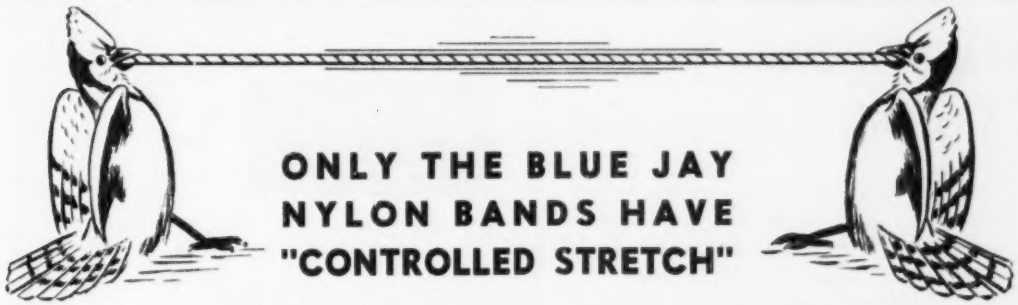

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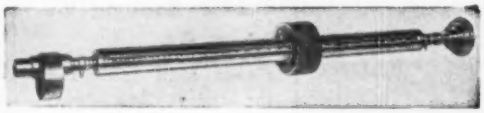

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414. STRIPS IN ROLLS—Form No. CF-442 Chemical inline showing over 20 strips and 50 thicknesses in textile use.—CAMERON MACHINE CO., Brooklyn, New York.

416. ENGINEERING PROPERTIES OF MONEL—Technical Bulletin T-7 gives detailed information on the properties of Monel, its fabrication, resistance to various types of corrosion, and other data of special interest.—INTERNATIONAL NICKEL CO., INC., New York, N. Y.

417. AUTOMATIC CONTROL HYDROS FOR CONTINUOUS BLEACHING—Illustrated folder describes the new method of controlling the temperature, pressure, and liquid level in the continuous bleach operation.—TAYLOR INSTRUMENT COMPANIES, Rochester 1, N. Y.

422. FILT-E-STIL—Attractive illustrated booklet describing the FILT-E-STIL system of purifying water.—AMERICAN CHEMICAL & CHEMICAL CORP., New York 20, N. Y.

424. STRAIGHTENING THE WEFT IN CLOTH—Article describing the process for straightening the weft (filling) yarn in woven fabrics, by high speed and heat application.—LOUIS HOPE LTD., Clement Co., Taunton, R. I.

426. BALL BEARING ROLLER TYPE SCRAY—Circular No. 501 describes the scray which is for use in handling heavy and large rolls of cloth. This is used either in the grey or finished state of cotton rolls.—HAMILTON MACH. INC., Somerville, Mass.

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806 Peachtree St., N.E.
Atlanta 5, Georgia

667. SINGLE APRON STOCK DRYER—Folder presenting the latest idea in automatic drying which every mill having drying problems on practically any kind of goods, manufacturing conditions.—C. G. HAGGERTY'S SONS CORP., Graniteville, Mass.

668. STAINLESS STEEL WARE—New data sheets available on this line of stainless steel pails, strainers, dipping ladles and other items.—AMERICAN Metal Dye Ket.—4 HILDEMAN, INC., Westchester, N. Y.

669. VAT DYEING OF WOOL—Write for Celanese Technical Bulletin No. 197 outlining fundamental principles and practical information involved in the technique of wool dyeing and finishing.—CELANESE CHEMICAL DIVISION, AMERICAN CYANAMID CO., Round Brook, N. J.

670. LUG STRAP WASHERS—Series 1-C illustrated bulletin detailing right and wrong construction and use of washers.—H. H. JACOBS NORTHERN DIVISION, Danielson, Conn.

671. PRINTING WITH AMIDYE PIGMENT COLORS—Bulletin P-1 describes preparation and application of pigment water-in-oil emulsions for printing cotton, rayon, and other fabrics.—INTERCHEMICAL CORP., TEXTILE COLORS DIV., Fort Lee, N. J.

672. CUTTING MACHINERY FOR THE TEXTILE INDUSTRY—Catalog describing hand to fully automatic machines which will operate in textile and paper mills.—THE OSBORN MANUFACTURING CO., Cleveland, Ohio.

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DYESTUFFS, CHEMICALS, SOAPS . . .

706. THEORETICAL AND APPLIED SILK-SOAKING—Attractive 32-page booklet outlining methods of silk-soaking and outlining investigation on the soaking bath—finding and deepening of silk.—HART PRODUCTS CORP., New York City.

707. HERCULES PINE OILS—Leaflet briefly describing advantages of using this manufacturer's pine oil—composed of terpene.—HERCULES POWDER COMPANY, Wilmington, Del.

712. VANDERBILT MATERIALS—Available is a 6-page booklet describing non-ionic Cyanamids and their use in textile operations.—R. T. VANDERBILT CO., INC., New York, N. Y.

715. LIGVATINE ED—Yet drying assistant increasing penetration and speed of drying, with maximum yield of color.—SANDOZ CHEMICAL WORKS, New York City.

715. AQUAROL AND ARKANSAS PRODUCTS—Bulletins on Aquarol and other product deals with method of preparing bath; also on other Arkansas products for cotton, wool, silk and rayon hosiery processing.—ARKANSAS CO., INC., Newark, N. J.

717. FINISH RE—Finishing compound declared as binder in combination with filling and stiffening compounds; avoids dusting, insures draping qualities.—M. NANDE CHEMICAL WORKS, New York.

720. SYNTHETIC FIBERS — Attractive folder briefly describing the company's products used in the manufacture of synthetic fibers.—HERCULES POWDER COMPANY, Wilmington, Del.

730. LEVELINE—Booklet describing use of Leveline for leveling vat and direct colors. Also for stripping dyed vat and sulphur colors.—AMERICAN ANILINE PRODUCTS, INC., New York, N. Y.

745. RAPIDASE FOR DESIZING—Bulletin explaining in detail the properties and characteristics of Rapidase.—WALLERSTEIN CO., INC., 180 Madison Avenue, New York 16, N. Y.

749. LUPOMIN G—Pamphlet outlines the application of the quaternary ammonium compound recommended for treating natural and synthetic fibres to give soft hand, lubrication, odorless fixation, brighter shades, etc.—JACQUIN WOLF & CO., Passaic, N. J.

750. LUPOMIN—Leaflet outlines the advantages of the cationic-active softener which is suitable for use on cotton, linen, silk, wool, synthetic fibres and mixed fabrics. A small percentage of lupomin gives a supple, smooth, pleasant hand.—JACQUIN WOLF & CO., Passaic, New Jersey.

756. TEXTILE SPECIALTIES—Listing and describing a wide range of textile specialties manufactured and sold by American Cyanamid Company, formulated to the latest advances in textile chemistry.—CALCO CHEMICAL DIVISION, AMERICAN CYANAMID COMPANY, 30 Rockefeller Plaza, New York 20, N. Y.

762. GNYX TECHNICAL DATA SHEETS—Two new data sheets describing the use, advantages, and application of Gnyx 5.60 and Gnyx 5.65, cationic soaps.—GNYX OIL & CHEMICAL COMPANY, Jersey City 2, N. J.

765. HOSIERY FINISHES AND FORMULAS—Attractive new booklet describing the Amalgamated line of hosiery finishes and giving numerous finishing formulas.—AMALGAMATED CHEMICAL CORPORATION, Philadelphia 34, Pa.

766. DU PONT PEROXIDE BLEACHING SYSTEMS—New book illustrating and describing the continuous peroxide bleaching process. Costs and other information included.—E. I. DU PONT DE NEMOURS & CO., ELECTROCHEMICAL DEPT., Wilmington, Del.

769. SURFACE TENSION DEPRESSANT — The Sterling "Processing and Abhesence—The Ideal Dye Penetrating Processant." introduces a new product which can be used as a wetting agent, 3 dye level leveling agent, solution in polymer, dyeing.—SLAYMAN PRODUCTS CORP., New York, N. Y.

771. "STARCH STABILIZER" — Folder on Vanlene, a product used for textile sizing and printing, finishing and the paper industry.—R. T. VANDERBILT CO., New York 17, N. Y.

775. TECHNICAL CHEMICAL DATA SHEETS—Complete set for dyeing, printing and finishing assistants, showing major properties, performance and chemical.—ONYX OIL & CHEMICAL CO., Jersey City 2, N. J.

774. ROYCE TEXTILE CHEMICALS—This booklet briefly describes the leading Royce products for textile processing, printing, dyeing and finishing.—ROYCE CHEMICAL COMPANY, Carlton Hill, N. J.

775. CAUSTIC SODA—Bulletin No. 6, 80 96-page technical bulletin is the latest in Solvay's well-known series. The text is profusely illustrated with diagrams, tables, graphs and charts.—SOLVAY SALES DIVISION, 40 Rector Street, New York 6, New York.

776. SERIZYME—Bulletin describing the properties and characteristics of Serizyme, a standardized liquid proteolytic enzyme preparation which, when used in various steps of grease substances.—WALLERSTEIN COMPANY, INC., 180 Madison Avenue, New York 16, N. Y.

777. HOSIERY DYEING—Catalog on hosiery dyeing machinery, deals drying machinery, package dyeing, extracting and drying equipment.—SMITH, DRUM AND CO., Philadelphia 33, Pa.

KNITTING . . .

686. KNITTING MACHINES—Booklets for hosiery, underwear, and outerwear, Series of illustrated booklets, each devoted to single-type circular knitting machine, full descriptions of machine and fabrics it knits, technical data.—SCOTT AND WILLIAMS, INC., New York, N. Y.

691. THE WILDMAN SINGLE-HEAD FULL-FASHIONED HOSIERY MACHINE—Literature on request from the WILDMAN MFG. CO., Full-Fashioned Division, Norristown, Pa.

692. THE TUBE-TEX FOR TUBULAR KNIT GOODS—Bulletin describing this modern machine which extracts, processes, dries, conditions and fabricates in one continuous operation, tubular knit goods—labor, power, space and waste.—E. W. BUTTERWORTH & SONS CO., Philadelphia.

696. STATISTICAL SURVEY—Covering the Full-Fashioned Hosiery Knitting Industry in the United States and Canada.—KNITTING WORKS, Reading, Penn.

698. TEXACO IN THE KNITTING INDUSTRY—Folder on knitting mill lubrication.—THE TEXAS CO., New York, N. Y.

699. ALUMINUM BEAMS—Catalog No. 1-51 describing Alcoa magnesium and aluminum specialties for the textile industry, illustrates this company's beams that are cost-thin the weight of conventional types.—ALCOA INDUSTRIAL PRODUCTS, Pittsburgh, Pa.

812. CIRCULAR KNITTING MACHINES—Interesting, informative and well illustrated is this six-page folder just released, which describes this company's small diameter circular knitting machines.—E. MERRITON COMPANY, Philadelphia 24, Pa.

815. THE NEW REINER HIGH SPEED TRICOT MACHINE—18" or 24" knitting widths. A richly illustrated catalog describing 28 features found in this type of construction and performance.—HOSIERY MACHINE, INC., Weehawken, N. J.

814. THE NEW REINER KAYLOOM—A combination Knitting Weaving Loom, features in an illustrated catalog, showing fiber attachment and other important points about this machine.—HOSIERY MACHINE, INC., Weehawken, N. J.

817. AUTOMATIC SELECTIVE STRIPPING MACHINE—Descriptive and illustrative folder, entitled "If It's Stripes, Consult Britain," now available. Important mechanisms involved in this process are described.—BRITTON COMPANY, Philadelphia, Pennsylvania.

818. MILTON LIGHT METAL BEAMS FOR EVERY APPLICATION—Catalog 46-A describing Milton Metal Trucks, Beams made in accordance with Special Purpose Specifications, Metal Pan Decks, Metal Tote Boxes.—MILTON MACHINE WORKS, INC., Milton, Pa.

820. VARIABLE STRIPED AND PLAIDS — Bulletin describing Scottie Model RA and RA-RAP Machines for knitting plaids, checks, Scotties, designs and variegated effects.—SUPERIOR KNITTING MACHINE CO., INC., 258 Johnson Ave., New York.

SEWING MACHINES . . .

861. LOCKSTITCH MACHINE WITH AUTOMATIC LUBRICATION — Bulletin illustrating new unit for single needle stitching on wide variety of articles, from light to heavy.—CHARLES A. WILCOX & SON SEWING MACHINE CO., 214 West 39th St., New York City.

918. THE NEW UNION SPECIAL LOCKSTITCH MACHINE—Information on the new model which puts production time on sewing operations up 25%. Letter to Dept. 28S.—UNION SPECIAL MACHINE CO., Chicago 10, Ill.

827. "FLATLOCK" MACHINE—Folder No. 940 describing, with illustrations, flat seaming, overlapping all knit underwear, lingerie and outerwear.—THE GIBBS SEWING MACHINE CO., New York, N. Y.

MATERIALS HANDLING . . .

1001. HOW TO DETERMINE WHERE OVERHEAD MATERIALS HANDLING EQUIPMENT CAN BE USED PROFITABLY—Profusely illustrated. Gives clear, concise understanding of materials handling. Helps you to determine where and what equipment is needed to get greatest handling and storage profits.—CLEVELAND TRAMRAIL DIV., Wickliffe, Ohio.

1002. CATALOG NO. 52—An attractive illustrated catalog describing in detail the Shawnee shipping container. Can be carried by trucks for terminal use.—MCENIS, INC., Madison, Ind.

1003. CASTERS AND WHEELS—192 pages, describing casters and wheels suitable for all types of industrial applications. Every mechanical engineer and purchasing agent should have this.—DARNELL CORP., LTD., Los Angeles, Calif.

1005. BASKETS, HAMPERS & TRUCKS—The 54-page catalog is profusely illustrated and contains complete data on the Dandux line of baskets, especially designed for the textile industry.—C. E. DANIELS, INC., Denison, Md.

1006. LANE CANVAS BASKETS—14 page illustrated booklet describing the Lane line of canvas baskets for textile use.—W. T. LANE & BROTHERS, Poughkeepsie, N. Y.

1007. OVERHEAD HANDLING EQUIPMENT — 56 pages of illustrations covering hundreds of different systems to meet every kind of handling problem.—THE AMERICAN MONORAIL CO., Cleveland, Ohio.

1008. CASTERS AND WHEELS—An illustrated booklet with complete specifications showing a complete assortment of Onion Textile Casters.—THE ONION CORP., Skokie, Ill.

1010. CONVEYOR KEY BOOK—A guide to production "step-ups" now possible with modern conveying. Shows time-and-effort savings. Well-illustrated with photos showing plant layouts and conveyor systems, how why different types of conveyors are used for maximum results.—LOGAN COMPANY, INC., Louisville, Ky.

1025. CAB-OPERATED AND FLOOR-OPERATED ELECTRIC HOISTS—Bulletin No. 127 describing and illustrating electric hoists in various types, sizes, capacities.—THE BEARD-HILES CHAIN & HOIST CORP., Mount Gilead, Ohio.

1026. SINGLE SEAM CHAINS—Bulletin No. 126 describing and illustrating the complete line of chains and hoists.—BEARD-HILES CHAIN AND HOIST CORP., Mount Gilead, Ohio.

1028. C-D HOLLOW WARE—This 52-page catalog, No. B-11, describes, illustrates and offers over Continental-Diamond's line of boxes, trucks, casks, barrels, baskets and trays. Complete description and specifications are given on each item.—CONTINENTAL-DIAMOND FIBRE CO., Newark 25, Del.

MISCELLANEOUS . . .

1101. AUTOMATIC BOBBIN REFINISHER—A descriptive bulletin illustrating and describing method of refinishing wornout bobbins of all types of reproductive materials.—M. NASH COMPANY, 2300 N. 30th St., Milwaukee, Wis.

1102. BALING PRESSES—An illustrated folder describing this manufacturer's complete line of balers for all materials. Both Downstroke and Upstroke types.—CINCINNATI BALER CO., Ann Arbor, Mich.

1103. UNBRAKO BOREWORK—Illustrated 16-page booklet No. 570 gives data on Unbrako hollow set screws, with knurled point, self-locking features. Including replacement screws and locking nut data.—STANDARD PRESSED STEEL CO., Jenkintown, Pa.

1104. INTERPRETATION OF ANALYSIS — In compiling this brief collection of terms which most frequently appear in analyses of surface active chemicals, an attempt has been made to explain as clearly as possible the meaning of these terms to those who have had little or no chemical training.—NOPCO CHEMICAL CO., Harrison, N. J.

1107. AUTOMATIC GUILL POLISHER—Bulletin describes production machine for rotisserie type babbitts. Fully automatic can be kept in operation at minimum labor cost.—THE HASSE CO., 2240 N. 28th Street, Milwaukee 10, Wis.

1108. FABRICATION OF U. S. STAINLESS STEELS—128-page book covering the use of stainless steel in textile equipment from cutting to shearing, welding, corrosion resistance data for fabricators.—CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh, Penn.

1111. BRUSHES—A 32-page booklet is now available which describes and illustrates this manufacturer's line of brushes for the textile industry.—HAMPTON BRUSH COMPANY, Greenville, N. C.

1114. SCOTCH TEXTILE YARNS—Four page brochure containing photographs and descriptive information on the many uses for pressure-sensitive Scotch tapes in the textile industry.—MINNESOTA MINING & MFG. CO., St. Paul, Minn.

TEXTILE INDUSTRIES, 806 Peachtree St., N.E., Atlanta 5, Ga.

Please send me, without obligation, free booklets or further information on New Equipment Items described in the May, 1950, issue of TEXTILE INDUSTRIES.

(Fill in here numbers you select from these pages).....

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Firm Name..... Position.....

City and State .....

Street .....

Technical Staffs

(*Continued from page 197*)

more than 600 mill companies scattered through 25 states. The question naturally arises, "How many technical men would have to be added to its staff to provide adequate service for its membership?"

To summarize, the idea of providing technical service is excellent and no doubt works admirably in industries where there are a relatively small number of units. Unless, however, textile mill companies are willing to pay the cost of technical service for the several thousand widely scattered units making up this industry, then the idea is impractical, even for national textile associations.—Sec.-Treas.

"Three 'If's'" Mill executives have a neat way of arriving at conclusions. They get the information on a matter, mentally catalog it in pro and con fashion, and let the answer assemble itself as the facts are produced.

Whether we like it or not, the importance of an organization to our important industrial and business groups is constantly increasing. It is much like the demands made by our people for more governmental services. The difference is that an industrial association is designed for, and functions only for its membership as a service organization, according to policies set by the Board of Directors.

With mill costs an ever-present factor, the problem in providing such technical services would be the additional costs. Actually, the benefits achieved through one association's work is secured at a cost to the individual mill of approximately the same money that the mill spends on postage.

As I see it, there are three imponderables. *If* the idea were to take hold in the minds of our mill executives, it could be done, *if* enough mills agreed on the potential value, and only *if* it was decided that the values would approximate the increased costs to the mills for the amount necessary to defray the additional expenses for such technical services.

—Exec. Vice-Pres.

McKIERNAN - TERRY CORPORATION

HARRISON, N. J. DOVER, N. J.

Manufacturers of

TEXTILE FINISHING MACHINERY

DYE BECKS • STEAMERS • WASHERS • AGERS
PADDERS • QUETSCHES • CALENDER AND EMBOSSING ROLLS

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NEED A DEPENDABLE SOURCE for ACETIC ACID, METHANOL?

PRICES COMPETITIVE....
YOUR ORDER SHIPPED IN 24 HOURS

This strategic Southern location enables us to offer you competitive prices . . . GLACIAL ACETIC ACID and in standard strength solutions of 80%-84%, shipped in aluminum tank cars or barrels; METHANOL in drum lots.

On What Shall We Quote?

"Located Centrally in the South"

CROSSETT CHEMICAL COMPANY
CROSSETT, ARKANSAS

Let this Trico Combination
SAVE YOU MONEY!

TRICO "POWDER-PACKED" FUSES AND "KLIPLOK" CLAMPS

Reduce Fuse Costs . . . Conserve Power . . . Save Fuse Clips . . . Eliminate Shut-downs.

TRICO "KLIPLOK" CLAMPS

Supply the necessary pressure between fuses and clips, reducing:—

- Premature Fuse Blowings.
- Lost Production.
- Costly Repairs.
- Wasted Kilowatts.
- Fire and Accident Hazards.

TRICO "Powder-Packed" FUSES

Tops in renewable fuses because of the CUSTOM-BUILT "Powder-Packed" renewal element. They're Different . . Provide:—

- Tamper-proof Protection
- Safe Time-lag
- Link Support
- Life-time Outer Parts
- Guaranteed Results

There's a style of TRICO "Kliplok" for every type fuse clip.

WRITE FOR BUL. NO. 1 & 4

TRICO FUSE MFG. CO., Milwaukee, Wis.
In Canada: IRVING SMITH LIMITED, Montreal

Gone
the old yarn-storage bin.

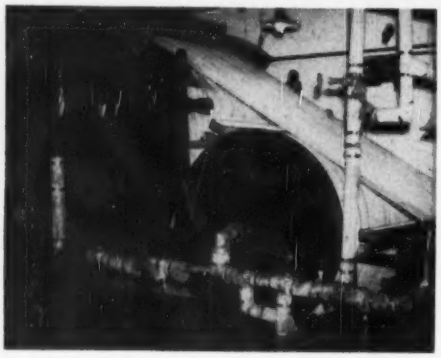
Style 21 stacking type

LANE
Canvas Boxes

Doff—wind—condition—store.
Function from spindle to loom.
No more dumping into splintery bins.
Just tier up boxes till needed.
Save waste—Save labor.

Write for Catalog No. 1-50

W. T. LANE & BROS., Inc.
Manufacturers
Poughkeepsie, N. Y.



RED-RAY BURNERS

installed on cotton slasher. Increased production. Improved warp.

Write for Bulletin No. 18.

RED-RAY MANUFACTURING COMPANY, INC.
455 W. 45TH STREET — NEW YORK 19, N. Y.

Sterling
Ring Travelers

TWISTING

Slight differences in the style of vertical twister rings will require a Traveler that has been properly fitted to that style. Past experience shows that we can fit these rings and give you much better results.

A TEST IS CONVINCING

M. H. CRANFORD
Box 204 Chester, S. C.
D. R. IVESTER
Box 882 Clarksville, Ga.
T. B. FARMER
Box 150 Langley, S. C.
J. S. FURTADO
Box 803 Fall River, Mass.

STERLING RING TRAVELER CO.
FALL RIVER, MASS.

SUPPLIERS' NEWS

WHAT THEY ARE DOING

Bachman Uxbridge Worsted Corp. has announced the appointment of **Ira L. Griffin & Son** of Charlotte, N. C., as southern representatives for their "Gentle Air" slasher.

Hunt Machine Works, Inc. has announced the appointment of John

Mr. Richardson

Richardson as vice-president, director, and sales manager. Mr. Richardson comes to Hunt from Crompton & Knowles Loom Works.

H. H. Stansbury has been made public relations director of **Clinton Foods, Inc.**, and its subsidiary divisions.

Donald F. Carpenter has been made general manager of the newly established film department, rayon division, of **E. I. duPont de Nemours and Co. Inc.** Robert A. Ramsdell is now a special assistant to the rayon department's general management; Dr. George W. Filson succeeds Mr. Ramsdell as manager of the nylon division, and Dr. G. Preston Hoff takes over Dr. Filson's duties in the acetate division. Dr. Winfield W. Heckert has been made manager of the technical division with Dr. Lester S. Sinness serving as assistant manager.

Cyclotherm Corp. has announced a reorganization of its management. Lewis H. Dietz has been made vice-president in charge of national sales, and Aatto P. Saha vice-president in charge of production and engineering.

Edmund D. Haigler is now associated with **Fischer & Porter Co.**, his responsibilities being the handling of special customer engineering problems.

The **Dow Chemical Company** has appointed Fred R. Geib national technical representative of the Dowicide Division. Mr. Geib, formerly midwestern representative, will work with the chemical sales force in all the sales offices. His headquarters will be in Chicago, Ill.

Joseph H. Girdler and Howard B. Johnson, of **Atlantic Steel Company**, and C. B. McManus, president of the Georgia Power Company, were recently elected directors of the Atlantic Steel Co. All officers of the firm were re-elected.

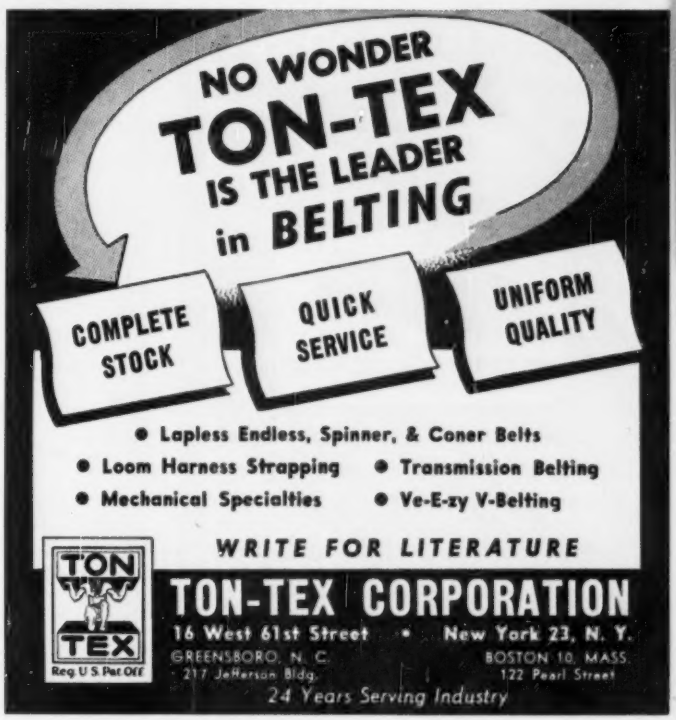
Robert H. Morse, Jr., formerly vice-president in charge of operations, was elected to the presidency of **Fairbanks, Morse & Co.** at the annual stockholders' meeting. He succeeds his father, Colonel Robert H. Morse, who is now chairman of the board of directors.

The **Truitt Manufacturing Co.**, Greensboro, N. C., has arranged for **Fisher Manufacturing Co.**, Hartwell, Ga. to manufacture the Truitt type of roving and filling trucks for the textile industries. This will enable the Truitt Company to use its entire floor space for the fabrication of stainless steel items.

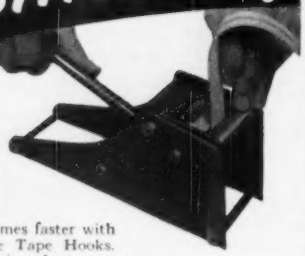
Minneapolis - Honeywell Regulator Co. has announced the appointment of Charles W. Bowden as industry

Mr. Bowden

manager for textiles for the Brown Instruments division. John B. Moxness has been appointed industry



10 TIMES FASTER THAN STITCHING!

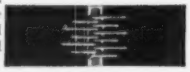


SPINDLE TAPE LACING EQUIPMENT

Lace spindle tapes 10 times faster with Clipper No. 25 Spindle Tape Hooks. Tapes can be prepared in advance so frame is shut down only long enough to place new tape on the pulleys and join ends with connecting pin. Tapes run true—last longer—run smoother—require less tension—VIBRATION IS ELIMINATED

CONDENSER TAPE LACING EQUIPMENT

Lace condenser tapes with Clipper No. 25 Condenser Tape Hooks. Clipper laced tapes, prepared in advance, can be installed in a fraction of the time required for endless tapes. Tape may be purchased in the roll at considerable saving.



CLIPPER BELT LACER COMPANY, GRAND RAPIDS 2, MICHIGAN

Clipper BELT LACING EQUIPMENT UL

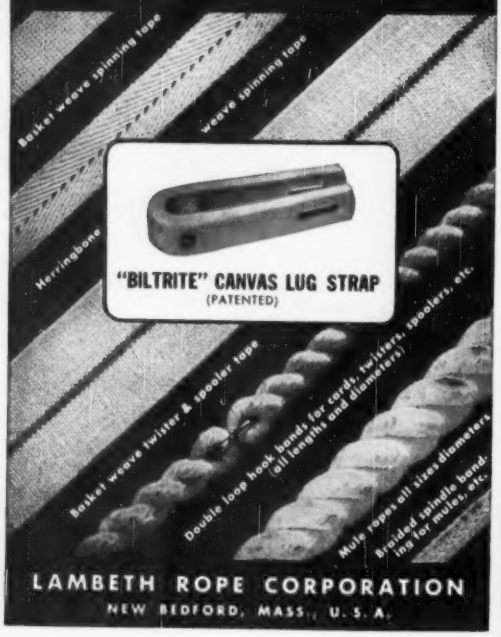
DRONSFIELDS' PATENT ATLAS BRAND EMERY FILLET

STOCKED BY

THE PRINCIPAL MILL SUPPLY HOUSES AND CARD MAKERS

LAMBETH PRODUCTS

FOR SPINNING, TWISTING, SPOOLING, WEAVING


Basket weave spinning tape
Weave spinning tape
Herringbone
"BILTRITE" CANVAS LUG STRAP
(PATENTED)
Basket weave twister & spooler tape
Double loop hook bands for cards, twisters, spoolers, etc. (all lengths and diameters)
Mule ropes all sizes diameters
Braided spindle bonding for mules, etc.

LAMBETH ROPE CORPORATION

NEW BEDFORD, MASS., U. S. A.

PENICK & FORD, LTD., INCORPORATED

CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS

NEW YORK, N. Y. • • • • CEDAR RAPIDS, IOWA

SOUTHERN OFFICES: ATLANTA, GA. • • • • SPARTANBURG, S. C.

John:
Why not let the Penick & Ford Textile Laboratory in Atlanta check specifications on that cloth?
Jim

engineer in charge of sales promotion of control devices.

Solvay Sales Division of **Allied Chemical & Dye Corporation** has announced the appointment of Harold F. Merritt as executive vice-president.

National Starch Products, Inc., has been selected by **Arnold, Hoffman & Co., Inc.,** to manufacture and sell their line of dextrines to the textile industry.

Howard Bros. Manufacturing Co. has announced the appointment of Neal A. Mitchell as general manager of the firm. Mr. Mitchell, associated with Howard Bros. since 1915, has been secretary and a director since 1936.

Mr. Mitchell

Sol C. Bennett and Associates, Inc., Dupont Circle Building, Washington 6, D. C., have announced their availability to the textile industry as government business consultants.

The **Reliance Electric and Engineering Co.** has announced the addition of six sales application engineers to district sales offices. Keith E. Carter has been assigned to Pittsburgh, Pa.; Thomas R. Corn to Cleveland, O.; Ralph I. Coryell to Syracuse, N. Y.; Warner Jennings to Detroit, Mich.; William C. Mitchell to Philadelphia, Pa.; and H. Norris Robinson to New York. Robert O. Gee has been assigned to the applied engineering department at the home office.

Leonard Rockstrom has joined **Cameron Machine Co.** as chief engineer. He was formerly associated with F. X. Hooper Co. Inc.

R. D. Houghton has been elected president and treasurer of the **Rice Pump and Machine Co.,** formerly a division of Milwaukee Chaplet & Mfg. Co. Erwin Losse is secretary of the new organization and Robert G. Rice has been named vice-president.

J. C. Martin has returned to the Atlanta, Ga. office of **H & B American Machine Co.** and will have charge of all sales and service activities in that territory. Creston P. Clark has been made assistant treasurer of the company and Walter H. Greenwood has been elected secretary. James Cruickshank has been appointed assistant to the president and will continue to handle all advertising and publicity matters.

Arlington Machine Works, Inc. has announced that its business is being carried out now under the name of **Arlington Machine Works Corp.** The corporation activities are being directed by Sydney P. Birch, formerly president and now a director and general manager. John D. Works has come to the firm from TEK Bearing Co., Inc. as president and a director.

John W. Sheppard has been appointed assistant director of **Hatch Textile Research,** according to an announcement by the director, Herbert H. Hatch.

A reassignment of territories and the addition of new representatives to the sales force have been announced by **Meese, Inc.,** Madison, Ind. Frank G. Hanson, formerly with S. J. Baumring Co., will travel in Ohio, Pa., Del., Md., Va., W. Va., N. C., and S. C. John A. Wurtz has been assigned to Ill., Ky., Tenn., Miss., Ala., and Ga. The states of N. Y., northern Ohio, Mich., Minn., Wis., Iowa, Neb., N. D., and S. D. will be handled by John T. McKeon; and Charles B. Stoltz will travel in Tex., La., Ark., Okla., Mo., and Kans.

Mr. Hanson

At the recent annual board meeting of **Koppers Company, Inc.,** General Brehon Somervell, president since 1946, was also named chairman of the board of directors. He succeeds J. P. Williams, Jr., retired, who remains a member of the board. W. F. Munnikhuysen was made

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for heating or cooling purposes on

Revolving Shafts and Drums

The Rotary Union needs no complicated piping and brackets . . . easily installed or removed . . . gives extra long, trouble-free service. Its low friction drag is especially valuable where high speeds must be maintained. Withstands high pressures and high temperatures.

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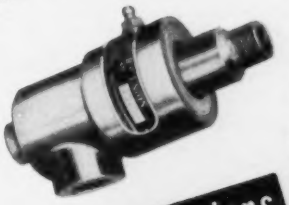

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Replace your stuffing boxes and packing joints, and worn out steam joints with this economical and efficient Rotary Union.

Available from stock in pipe sizes from ½" to 3" Plain and Syphon Types.

Write for catalog explaining advantages of using Rotary Unions in your plant.

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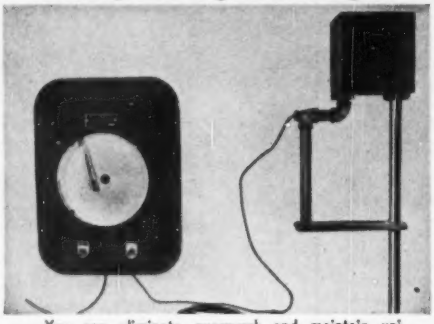

You can eliminate guesswork and maintain uniformity in warp sizing by using Norcross Recording Viscometers, now operating in more than 150 mills, or the newly developed Norcross Automatic Viscosity Control System (*Mechanical Agitation*).

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Get 20% to 35% greater life than ordinary bronze, with U. S. "SPECIAL BRONZE" travelers. This new alloy has definitely proved itself!

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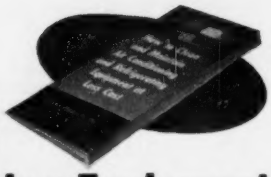

IF you are responsible for the efficient operation of air conditioning equipment send for a FREE copy of this handy little booklet. It tells you what to do about LIME SCALE. How to get rid of it. How to prevent it from forming. And the booklet discusses that other *enemy of efficiency* . . . SLIME. Describes simple, low-cost ways to prevent it from fouling up lines, tanks and spray jets.

Other items of interest: Cleaning finned coils of air-washers; Cleaning aluminum plates and screens; Descaling cold diffusers; Cleaning glass filter screens. For your FREE copy simply drop a line to Oakite Products Inc., 26C Thames St., New York 6, N. Y. No obligation.

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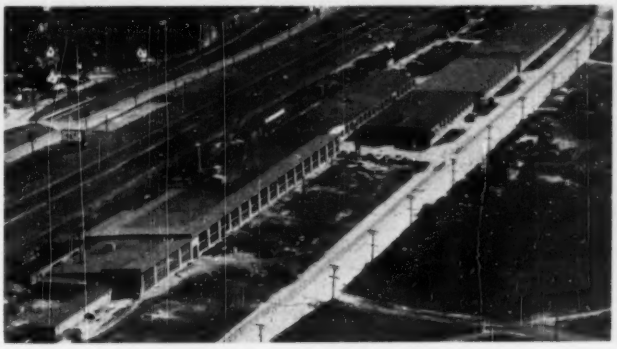

NEW WEST WING FOR BAHAN

Bahan Textile Machinery Co. of Greenville, S. C., manufacturer of textile machine parts, has recently completed a new west wing which adds approximately 50,000 sq. ft.

Addition of the new wing enables the company to carry in stock a large inventory of standard, interchangeable parts for immediate delivery.

executive vice-president, and he and Joseph Becker, vice-president, were named members of the board.

Bjorksten Research Laboratories have opened an office in New York City, at 50 East 41st Street. Dr. Johan Bjorksten, president, will divide his time between the New York office and the laboratories in Wisconsin.

The Northeast Industrial Equipment Company, Inc., has been chosen by **Hyster Company** to handle sales and service of their lift trucks, mobile cranes, and attachments in Maine, New Hampshire, Rhode Island, and ten counties of Massachusetts.

Hooker Electrochemical Co. has announced the appointment of John P. Edwards as supervisor of product application. Mr. Edwards has been with the firm since 1940.

The Carborundum Company has announced the promotion of Ernest R. Baxter from director of sales to assistant vice-president. Frederick W. Bonacker, formerly sales manager of the coated products division, is now general sales manager of the company, and Fred W. Scott is taking over Mr. Bonacker's former duties.

L. J. Wing Manufacturing Co. has consolidated its three factories and its general offices into a single modern factory building at Linden, N. J. An office at 154 West 14th Street, New York 11, N. Y. will be maintained for New York City sales.

Fred Winfield Winecoff has been added to the sales staff of **New York and New Jersey Lubricant Co.** to

Mr. Winecoff

succeed the late W. C. Taylor. He will cover the North Carolina and southern Virginia territory.

W. M. Kline, Jr., was recently elected vice president of **Texize Chemicals, Inc.** W. J. Greer was re-elected president and treasurer, and James L. Love was re-elected secretary.

Schaefer Brush Manufacturing Co. has announced the organization of a new brush research and development division which will be open to all manufacturers and users of brushes to help them solve their cleaning problems.

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gives fabric counts

accurately, directly, without eyestrain

FAR SUPERIOR to the slow, old-fashioned method, the new Micro-Line Counter *does away with the tedious work of counting individual threads . . . saves time . . . eliminates the torture of eyestrain . . . prevents errors in count.*

HERE'S WHY! The Micro-Line Counter is a scientific instrument that gives accurate, instantaneous fabric counts—from 40 to 150 per inch—of plain-woven goods such as cottons, sheetings, percales, rayons, nylons, linens, silks and tropical worsteds. It will also give the pick on most twill or satin weaves as well as the wales and courses on tricots and plain knits.

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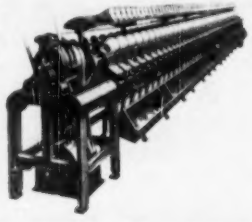

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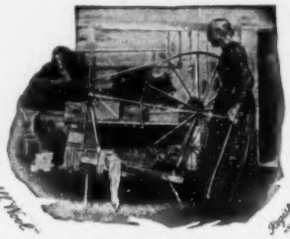

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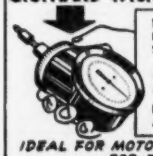

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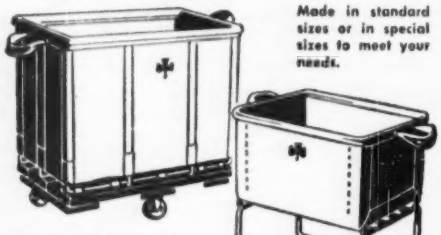

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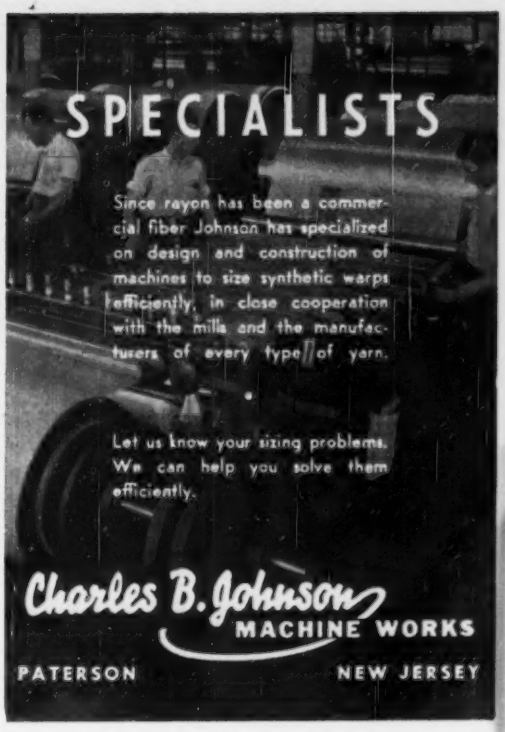
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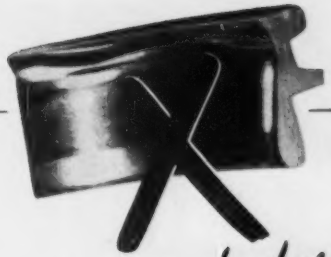

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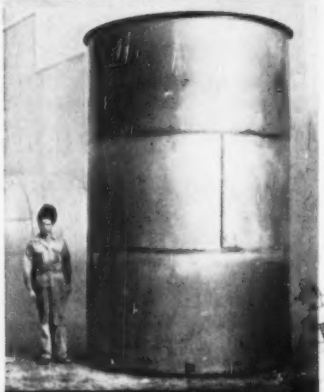

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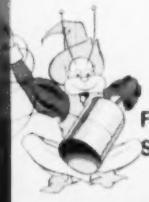

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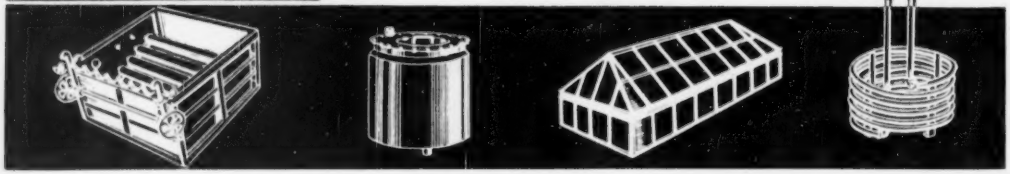

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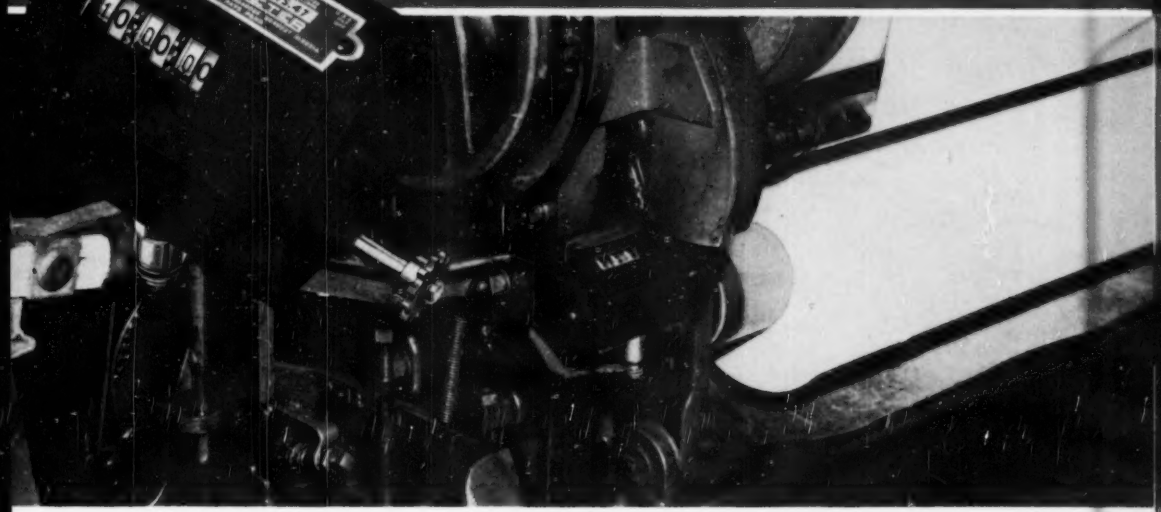

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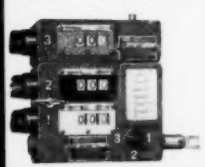

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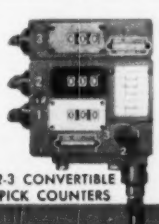

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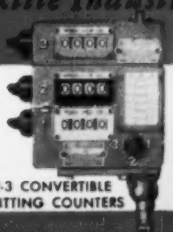

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